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SITE ASSESSMENT REPORT FOR SITE 250 NS MAYPORT FL
12/1/2004
TETRA TECH NUS

Rev. 1
12/29/04

Site Assessment Report
for
Site 250

Naval Station Mayport
Mayport, Florida

Southern Division
Naval Facilities Engineering Command
Contract Number N62467-94-D-0888
Contract Task Order 0303

December 2004

Rev. 1
12/29/04

SITE ASSESSMENT REPORT
FOR
SITE 250

NAVAL STATION MAYPORT
MAYPORT, FLORIDA

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

Submitted to:
Southern Division
Naval Facilities Engineering Command
2155 Eagle Drive
North Charleston, South Carolina 29406

Submitted by:
Tetra Tech NUS, Inc.
661 Andersen Drive
Foster Plaza 7
Pittsburgh, Pennsylvania 15220

CONTRACT NUMBER N62467-94-D-0888
CONTRACT TASK ORDER 0303

DECEMBER 2004

PREPARED UNDER THE SUPERVISION OF:

FOR

MARK PETERSON, P.G.
TASK ORDER MANAGER
TETRA TECH NUS, INC.
JACKSONVILLE, FLORIDA

APPROVED FOR SUBMITTAL BY:

Debra M Humbert

DEBRA M. HUMBERT
PROGRAM MANAGER
TETRA TECH NUS, INC.
PITTSBURGH, PENNSYLVANIA

PROFESSIONAL CERTIFICATION

Site Assessment Report
Site 250
Naval Station Mayport, Mayport, Florida

This Site Assessment Report was prepared under the direct supervision of the undersigned geologist using geologic and hydrogeologic principles standard to the profession at the time the report was prepared in general conformance with the Requirements of Chapter 62-770, Florida Administrative Code. If conditions are determined to exist that differ from those described, the undersigned geologist should be notified to evaluate the effects of additional information on the assessment described in this report. This report was developed specifically for the referenced site and should not be construed to apply to any other site.

Mark G. Peterson

December 29, 2004
Mark Peterson, P.G.
Florida License Number PG-1852

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ACRONYMS

ASTs	Aboveground Storage Tanks
BTEX	Benzene, Toluene, Ethylbenzene, and Total Xylenes
bls	Below Land Surface
°C	Degrees Celsius
CLEAN	Comprehensive Long-term Environmental Action Navy
CTO	Contract Task Order
DCA	Dichloroethane
DCE	Dichloroethene
DPT	Direct-Push Technology
DRO	Diesel Range Organics
EEG	Ellis Environmental Group
ENCO	Environmental Conservation Laboratories, Inc.
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
FID	Flame-Ionization Detector
FL-PRO	Florida Petroleum Range Organics
ft	Feet (or Foot)
ft/day	Feet (or Foot) per Day
ft/ft	Feet (or Foot) per Foot
GAG	Gasoline Analytical Group
GCTLs	Groundwater Cleanup Target Levels
HASP	Health and Safety Plan
HSAs	Hollow Stem Augers
ID	Inside Diameter
KAG	Kerosene Analytical Group
Katahdin	Katahdin Analytical Services, Inc.
LUCs	Land Use Controls
μg/L	Micrograms per Liter
mg/kg	Milligrams per Kilogram
mg/L	Milligrams per Liter
mgd	Million Gallons per Day
msl	Mean Sea Level
MTBE	Methyl Tertiary-Butyl Ether
NAVFAC EFD SOUTH	Southern Division, Naval Facilities Engineering Command
NAVSTA	Naval Station

ACRONYMS (CONTINUED)

Navy	United States Navy
OVA	Organic Vapor Analyzer
PAHs	Polynuclear Aromatic Hydrocarbons
Partridge	Partridge Well Drilling, Inc.
ppm	Parts per Million
PVC	Polyvinyl Chloride
PWC	Public Works Center
SA	Site Assessment
SAR	Site Assessment Report
SCTLs	Soil Cleanup Target Levels
SIM	Select Ion Method
TBM	Temporary Benchmark
TOC	Top-of-Casing
TRPH	Total Recoverable Petroleum Hydrocarbons
TtNUS	Tetra Tech NUS, Inc.
UCL	Upper Confidence Level
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UST	Underground Storage Tank
VOCs	Volatile Organic Compounds

EXECUTIVE SUMMARY

Tetra Tech NUS, Inc. (TtNUS) has completed a Site Assessment (SA) at Site 250, Naval Station (NAVSTA) Mayport, Mayport, Florida in accordance with the requirements of Chapter 62-770, Florida Administrative Code (FAC). This Site Assessment Report (SAR) is being submitted to the Florida Department of Environmental Protection (FDEP) for approval. A SAR summary sheet is included as Appendix A.

To complete this SA, TtNUS:

- Reviewed available United States Navy (Navy) documents to:
  - Identify potential sources and receptors for petroleum hydrocarbons in the vicinity.
  - Identify private potable wells within a 0.25-mile radius of the site and public water supply wells within a 0.5-mile radius.
  - Locate nearby surface water bodies.
  - Evaluate surface hydrology and drainage.

- Conducted a site walk-through survey.

- Performed a soil vapor survey to delineate areas of excessively contaminated soil, if present.

- Advanced 21 soil borings on site using direct-push technology (DPT) and/or a stainless steel hand auger and collected soil and groundwater samples from the borings for analysis by mobile and fixed-base laboratories.

- Completed an additional 15 soil borings and collected soil samples for total recoverable petroleum hydrocarbons (TRPH) using the Florida Petroleum Range Organics (FL-PRO) method and polynuclear aromatic hydrocarbons (PAHs) using United States Environmental Protection Agency (USEPA) Method 8270 Select Ion Method (SIM).

- Installed five shallow monitoring wells and one deep monitoring well and collected groundwater samples from these wells for analysis of Gasoline Analytical Group (GAG)/Kerosene Analytical Group (KAG) constituents.

- Referenced and obtained appropriate aquifer data from the United States Geological Survey (USGS) to calculate aquifer characteristics at NAVSTA Mayport.

The potential source area at the site is a grass-covered area where a 12,500-gallon waste oil underground storage tank (UST) and two 10,000-gallon fuel oil aboveground storage tanks (ASTs) were removed. "Excessively contaminated soil," as defined by Chapter 62-770.200(12), FAC, was identified in samples collected from four boring locations during the preliminary (DPT) phase of the assessment. Three of the samples were located approximately 50 feet (ft) west or southwest of the potential source area, and the fourth was located approximately 15 ft southwest of the former waste oil UST location. The mobile laboratory reported exceedances of leachability Soil Cleanup Target Levels (SCTLs) for either naphthalene compounds or TRPH in two of the four samples from which splits were collected. Both exceedances were located 50 ft from the suspected source.

Shallow groundwater grab samples were collected by DPT methods at 15 site locations. Concentrations exceeding FDEP Groundwater Cleanup Target Levels (GCTLs) were reported in five of the samples, including one of those where contaminated soil was identified. The only targeted constituents reported at concentrations exceeding GCTLs were naphthalene, 1-methylnaphthalene, 2-methylnaphthalene, and TRPH. These were the four most frequently recurring compounds in laboratory analyses throughout the assessment. Exceedances of these constituents in groundwater grab samples were not concentrated in one area, but distributed over a wide area, including at the former source area (former UST location) and to the west, southwest, and southeast of the former source area.

Monitoring wells were installed at locations based upon groundwater analytical data generated from the DPT phase of the assessment. Fixed-base laboratory data reported for groundwater samples collected from the wells was in general agreement with mobile laboratory data as to the location of contaminants, but the concentrations were significantly lower. For example, each of the three naphthalene compounds reported in exceedance of SCTLs in SB-02 by the mobile laboratory during the DPT phase were also detected in the sample collected from MW-01 (same location) during the follow-up phase but at concentrations slightly above laboratory detection limits. No GCTL exceedances were reported in any of the samples collected from the permanent monitoring wells. The only petroleum hydrocarbon detections reported in the permanent monitoring well samples other than those collected from MW-01 were TRPH [220 micrograms per liter (µg/L) in MW-02] and acenaphthene [0.14 µg/L in MW-03]. The regulatory standard for these two compounds is 5 µg/L and 20 µg/L, respectively.

Supplemental soil and groundwater assessment was performed which involved field screening and fixed-base laboratory analysis of soil samples from 15 additional borings near previously identified hotspots and re-sampling of groundwater from five of the six monitoring wells. Excessively contaminated soil, per FAC guidance, was not identified during the field screening. TRPH was reported at elevated concentrations in 3 of the 15 soil samples analyzed by the laboratory. Groundwater analytical results of the second sampling event were comparable to those of the first event. TRPH and several PAHs, notably the naphthalene compounds, were detected by the laboratory, but at low levels slightly above laboratory detection limits and significantly below GCTLs.

Statistical analysis of the soil analytical data results was performed to determine the upper confidence level (UCL) of the site impacts. A 95% UCL was achieved based on the removal of approximately 70 cubic yards of soil located in the grassy area where the former UST and ASTs resided. Based on this limited amount of soil contamination identified, TtNUS recommends that a remedial-measure aimed at removing contaminated soils exceeding FDEP SCTLs identified at the site be conducted, which will allow the site to meet the 95% UCL. In addition, post-excavation groundwater monitoring should be conducted in accordance with Chapter 62-770, FAC, requirements.

1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE

TtNUS performed a SA at Site 250, NAVSTA Mayport, for the Southern Division, Naval Facilities Engineering Command (NAVFAC EFD SOUTH) under Contract Task Order (CTO) 0303 of the Comprehensive Long-term Environmental Action Navy (CLEAN) III Contract Number N62467-94-D-0888. The data collected during the investigation was used to prepare a SAR. Information from the field investigation has been assimilated into this SAR to provide a characterization of site conditions from which to base future courses of action. A SAR Summary Sheet is included as Appendix A.

The purpose of this SA was to evaluate the extent of petroleum hydrocarbons in subsurface soils and groundwater at Site 250 in accordance with the requirements of Chapter 62-770, FAC. A 12,500-galllon UST containing waste oil was excavated and removed from the site in July 1998 by Ellis Environmental Group (EEG). Prior to UST excavation and removal, soil samples collected from a stained area in the tank pit were found to contain several waste oil constituents at concentrations exceeding FDEP SCTLs. Two limited assessments were performed in the area of the removed waste oil UST subsequent to tank removal. In 2002, two 10,000-gallon ASTs containing fuel oil, located south of the waste oil UST, were also removed by EEG, but no assessment of environmental media was associated with removal of these tanks. A summary of site investigative history is provided in Section 1.8.

1.2 FACILITY AND SITE LOCATION

NAVSTA Mayport is located within the corporate limits of the City of Jacksonville, Duval County, Florida, approximately 12 miles northeast of downtown Jacksonville and adjacent to the town of Mayport. A Site Vicinity Map showing NAVSTA Mayport's location in northeastern Florida is provided as Figure 1-1. The station complex is located on the northern end of a peninsula bounded by the Atlantic Ocean to the east and the St. Johns River to the north and west. NAVSTA Mayport occupies the entire northern part of the peninsula except for the town of Mayport, which is located to the west between the station and the St. Johns River.

Site 250 is located northeast of the intersection of Massey Avenue and Maine Street. The site is located near the center of the base adjacent to Delta Pier and approximately 175 ft west of the turning basin as shown on Figure 1-2. The area of investigation is centered on the location of the removed ASTs and UST, north of former Building 250.

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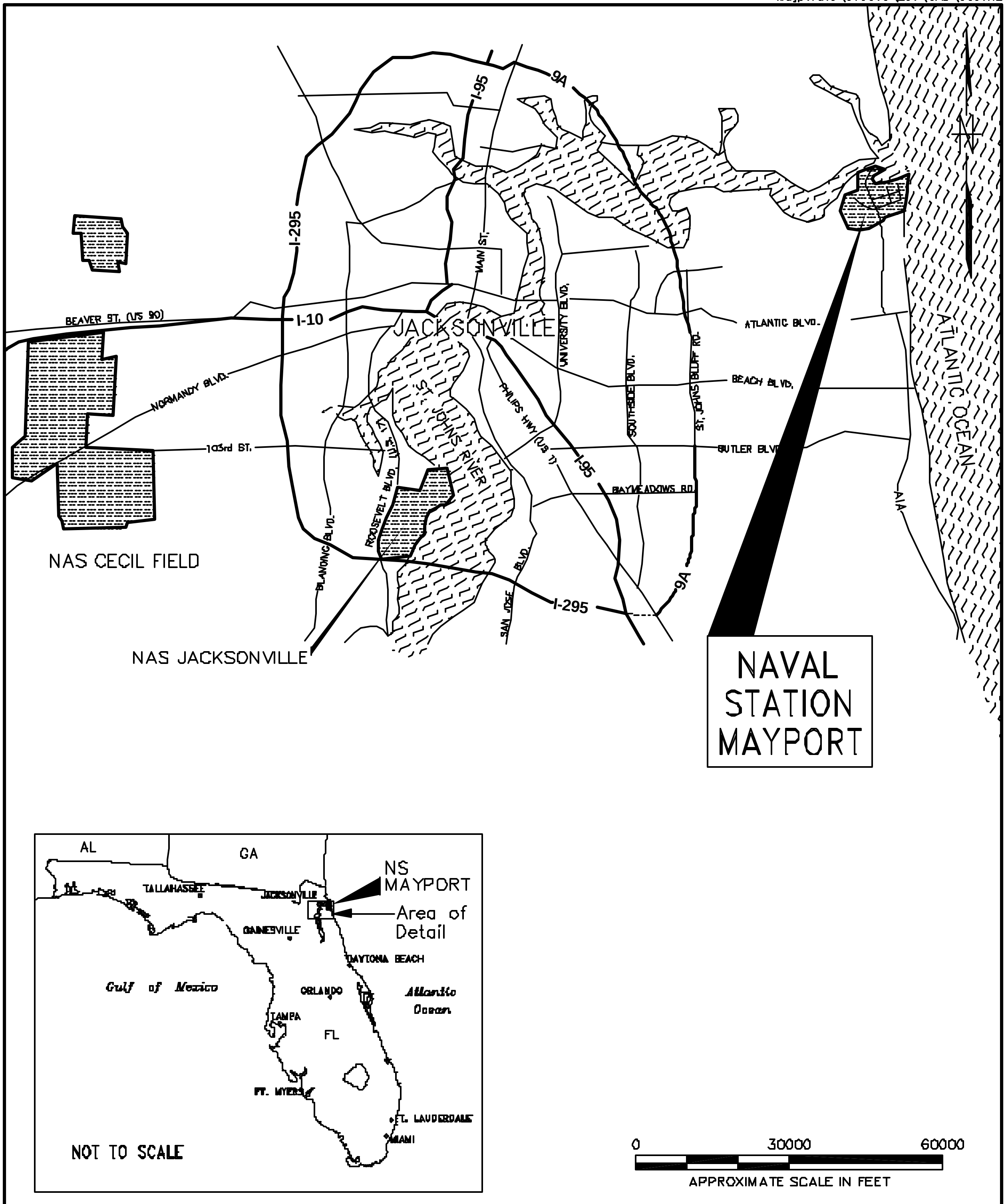

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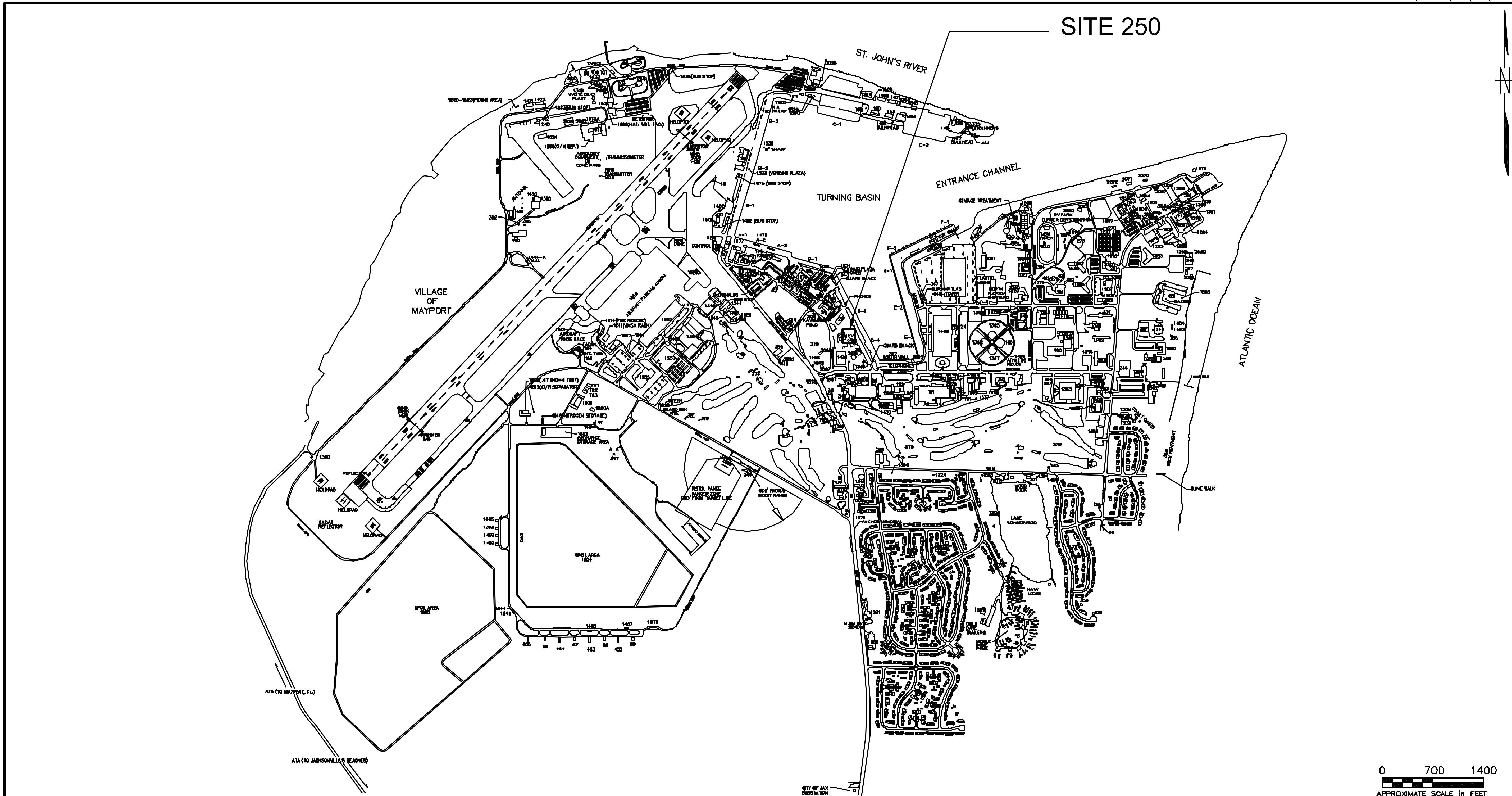

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SITE LOCATION MAP
SITE 250
SITE ASSESSMENT REPORT
NAVAL STATION MAYPORT
MAYPORT, FLORIDA

CONTRACT NO. 5863
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1.3 REGIONAL GEOLOGY AND HYDROGEOLOGY

Northeastern Florida is underlain by the following two main aquifer systems: the surficial aquifer system and the Floridan aquifer system. The surficial aquifer system in the vicinity of NAVSTA Mayport includes sediments of the Upper Hawthorn Group, upper Miocene and Pliocene deposits, and Pleistocene and Holocene deposits [United States Department of Agriculture (USDA), 1978]. These undifferentiated surficial deposits extend from land surface to the top of the Hawthorn Group, about 50 ft below land surface (bls) (USGS, 1992).

The surficial aquifer system consists of fine-grained sands near the surface interspersed with thin (less than 1 ft) clay lenses and generally grades to a mixture of sand and coarse shell fragments from 30 to 50 ft bls. The base of the surficial aquifer system is the intermediate confining unit, which is a sequence of marine clays and discontinuous limestone stringers (Spechler, 1994).

The Floridan aquifer system is the principal source of groundwater for public drinking water in most of northeastern Florida. In the area of investigation, the system is comprised of (from youngest to oldest) the Ocala Formation, the Avon Park Formation, and the Oldsmar Limestone. The Hawthorn Group, a confining unit between the surficial aquifer system and Floridan aquifer system, unconformably overlies the Floridan aquifer (USDA, 1978).

1.4 POTABLE WATER WELL SURVEY

The potable water supply information presented in this report was obtained from a Contamination Assessment Report prepared by the United States Army Corps of Engineers for a nearby site (Site 1330) in 1992. Personnel at the water treatment plant confirmed the accuracy of the water well information. The locations of the potable wells are depicted on Figure 1-3. Potable well information is summarized on Table 1-1.

Potable water is supplied to NAVSTA Mayport by three on-base supply wells. One of the three wells is 12 inches in diameter, and the other two are 16-inch diameter wells. All three wells draw water from the Floridan aquifer from depths of approximately 1,000 ft bls. Well capacities range between 2.1 and 2.9 million gallons per day (mgd) with a combined total pumping capacity of 10.0 mgd. All three of the active wells are within one-half mile of the site as shown on Figure 1-3. The water is treated by the base water treatment plant prior to distribution.

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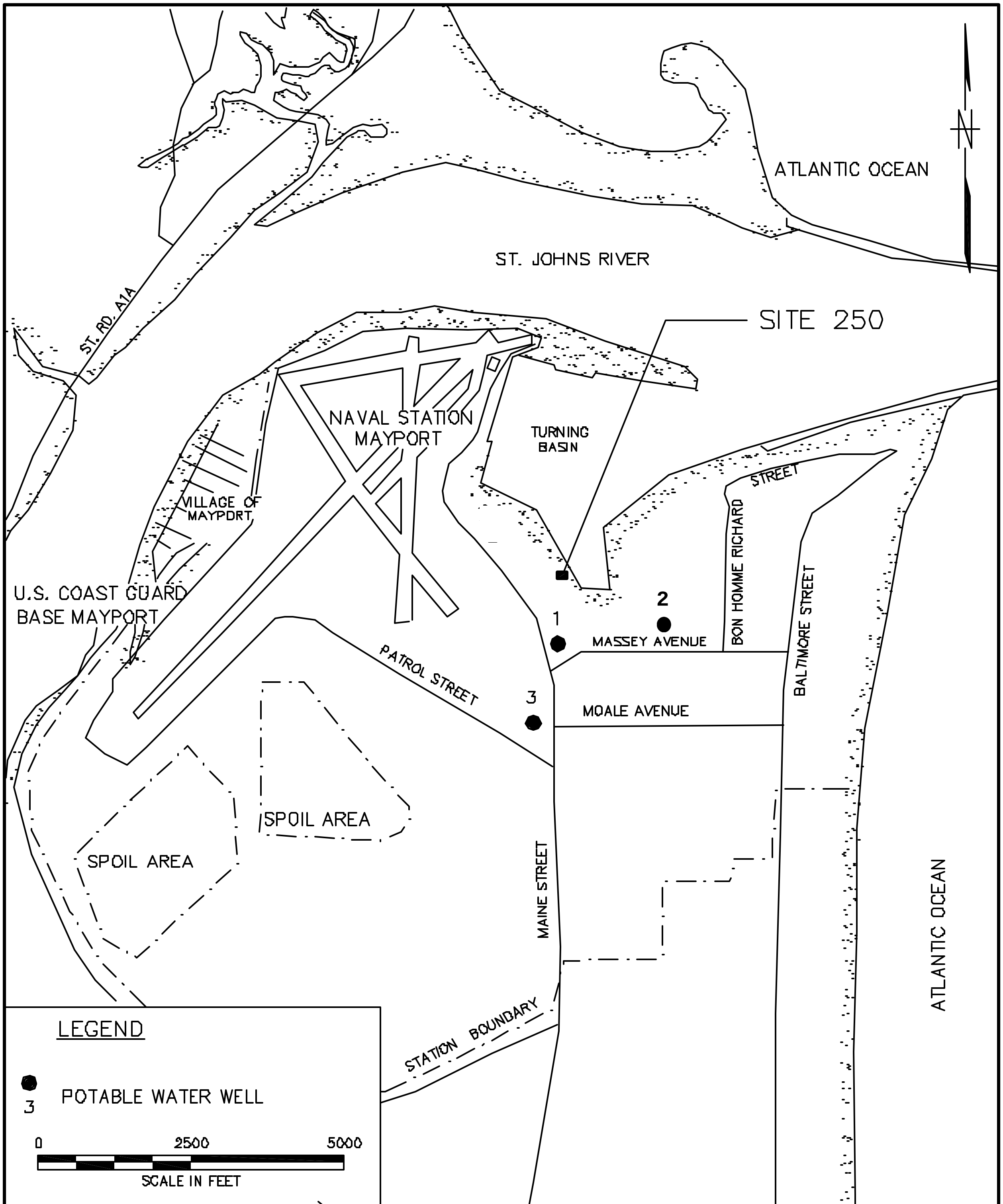

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Table 1-1
Potable Water Well Survey Results

Site Assessment Report, Site 250
Naval Station Mayport
Mayport, Florida

Well Identification	Distance from Site (miles)	Diameter (inches)	Depth of Well (ft bls)	Use
1	0.2	12	1,000	In use
2	0.3	16	1,000	In use
3	0.4	16	1,000	In use

1.5 TOPOGRAPHY AND DRAINAGE

NAVSTA Mayport is located in the Southeastern Coastal Plain physiographic province. The topography is mostly low, gentle to flat, and composed of a series of ancient marine terraces. NAVSTA Mayport is located within the Silver Bluff Terrace. The average land surface elevation at NAVSTA Mayport is between 8 and 10 ft above mean sea level (msl) (USGS, 1992).

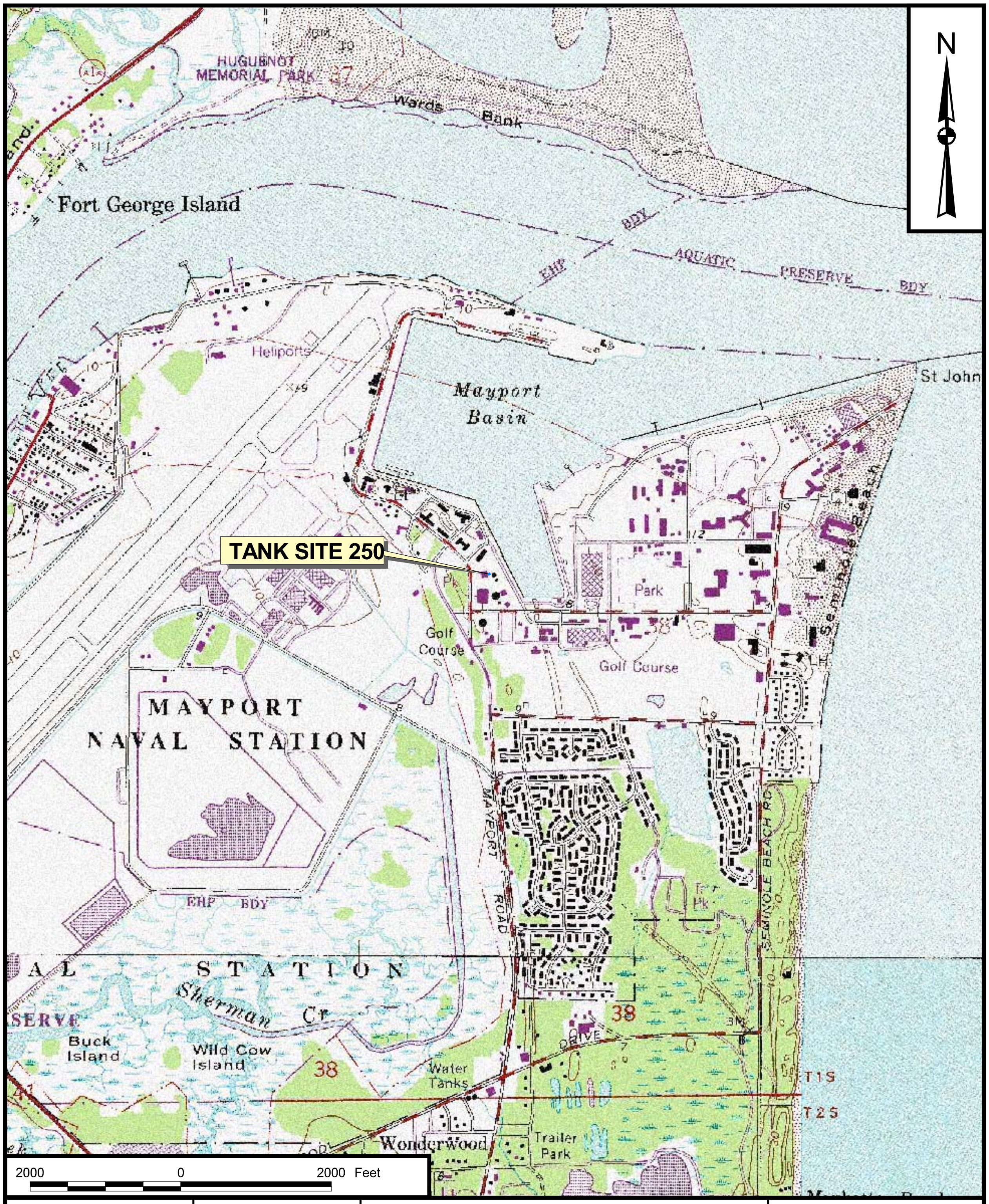
Site 250 is a relatively flat parcel located on the western side of a finger of the turning basin which projects southward from the main basin. A portion of the USGS Mayport, Florida 7.5-minute quadrangle has been reproduced as Figure 1-4 to show the site location relative to its topographic surroundings.

1.6 LAND USE IN SITE VICINITY

The site is bounded by asphalt pavement and parking areas to the north and east, by a bulk water storage tank (Tank 288) to the south, and by Building 234 to the west.

1.7 SITE DESCRIPTION

A site plan showing surface features in the area of investigation is provided as Figure 1-5. The northern edge of a long, narrow storm water retention pond trending southeast to northwest occupies the location of former Building 250. The removed waste oil UST and two fuel oil ASTs were located in what is now an area covered with grass extending approximately 80 ft northward from the retention pond. Building 234, a corrugated metal building, is located approximately 60 ft west of this grass area. A large area surrounding Building 234, including the 60-ft wide area between the building and the grass area, is paved with asphalt. Areas to the north of the grass area and to the north and east of the retention pond are also paved with asphalt, primarily for parking. The Mayport turning basin is located approximately 175 ft east of the grass



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COST/SCHEDULE-AREA			NAVAL STATION MAYPORT	APPROVED BY / DATE
SCALE	AS NOTED		MAYPORT, FLORIDA	DRAWING NO. FIGURE 1-4 / REV 0

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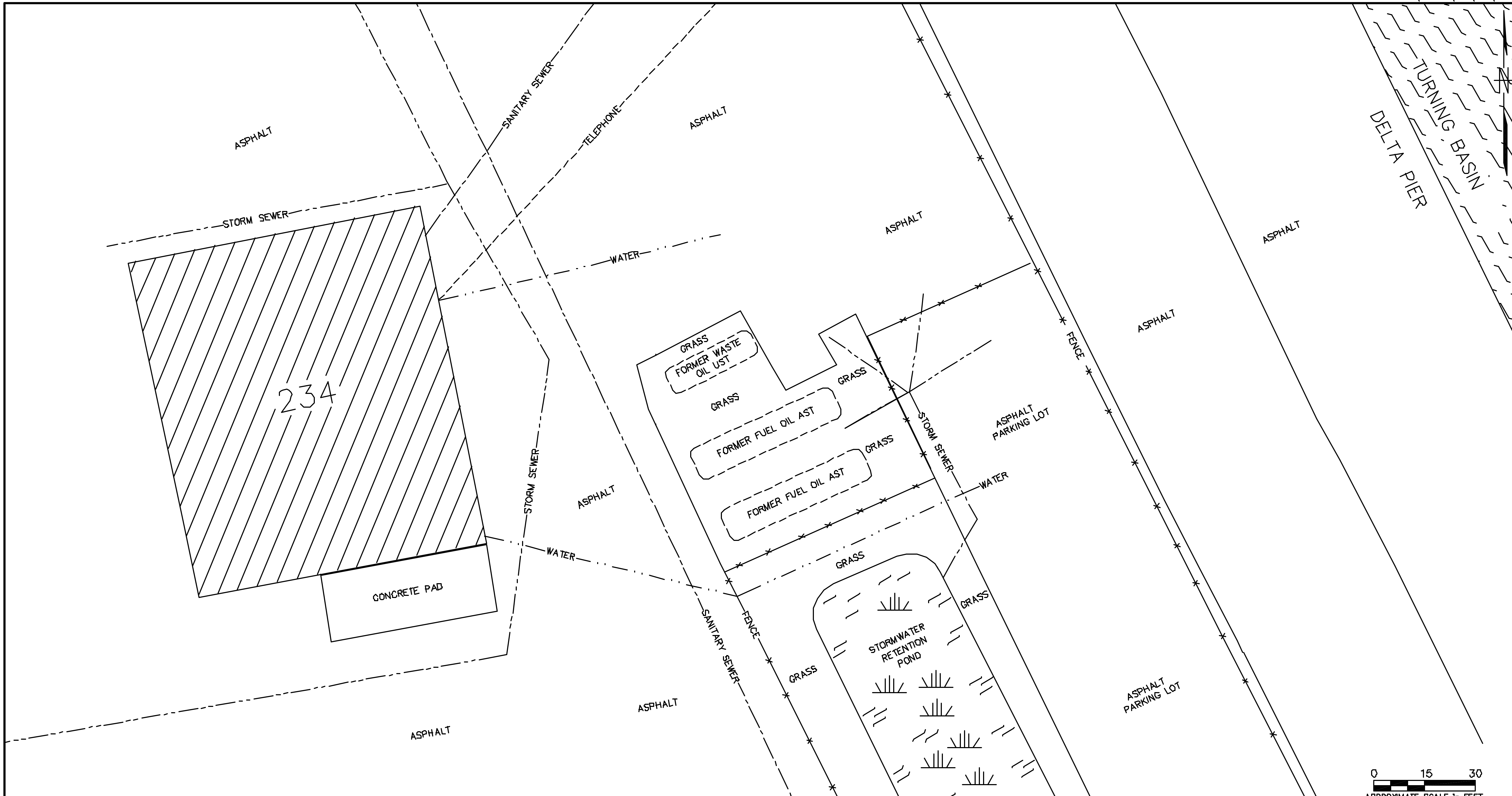

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SCALE AS NOTED

SITE PLAN
SITE 250
SITE ASSESSMENT REPORT
NAVAL STATION MAYPORT
MAYPORT, FLORIDA

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area where the tanks were formerly located. The area between the site and turning basin is congested and the surface is covered mostly by asphalt pavement.

1.8 SITE OPERATIONS AND INVESTIGATIVE HISTORY

1.8.1 Tank Closure (EEG, 1998)

A 12,500-gallon UST was installed at Building 250 in 1980 for storage of waste oils prior to burning of the oils in a boiler used to produce steam. The tank was removed by EEG in July 1998. A copy of the Tank Closure Report is provided in Appendix B.

EEG collected stained soil samples and sludge samples from the waste oil tank on June 4, 1998, prior to tank excavation. These samples were analyzed for TRPH using USEPA Method 418.1, for Resource Conservation and Recovery Act metals using USEPA Method 6010, and for volatile organic compounds (VOCs) using USEPA Methods 8010 and 8020 to determine if the stained soil was to be characterized as hazardous waste by toxicity. One additional soil sample was submitted to the laboratory on July 10, 1998, for analysis of PAHs by USEPA Method 8100 and for analysis of Toxicity Characteristic Leaching Procedure lead. Based on analytical results, the soils were not classified as hazardous waste; however, naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene were identified at concentrations exceeding the respective leachability SCTLs, and TRPH was reported at a concentration of 28,000 milligrams per kilogram (mg/kg), exceeding its industrial SCTL of 2500 mg/kg. All “excessively contaminated soil” (25 cubic yards) was reportedly removed and transported offsite for disposal. Additionally, approximately 2000 gallons of sludge and petroleum contact water was pumped from the tank and disposed offsite under a non-hazardous materials manifest. There was no reference in the report to the condition of the removed waste oil UST.

1.8.2 Limited Site Assessment (TtNUS, 1999)

The performance of additional site assessment was requested by NAVFAC EFD SOUTH. Consequently, TtNUS completed a limited site investigation of the former waste oil UST area in March 1999 using DPT. A copy of the Limited Site Assessment Letter Report is provided in Appendix C. Soil samples collected 0 to 2 ft bls, 2 to 4 ft bls, and 4 to 6 ft bls at six boring locations in and around the former waste oil UST were screened for organic vapor content using an organic vapor analyzer (OVA) equipped with a flame ionization detector (FID). Organic vapor concentrations exceeding 50 parts per million (ppm), indicative of “excessively contaminated soil” per rule 62-770.200(12), FAC, were recorded on four of the six samples collected 4 to 6 ft bls and on three of the samples collected 2 to 4 ft bls. Two samples from the depth interval 4 to 6 ft bls had readings greater than 1000 ppm. No organic vapors were detected in the surface samples (0 to 2 ft bls).

Four soil samples collected 4 to 6 ft bls and two groundwater samples collected from temporary well points were analyzed by a fixed-base laboratory for waste oil parameters listed in Table C, Chapter 62-770, FAC. TRPH was the only targeted constituent identified by the laboratory at concentrations exceeding regulatory criteria. Three of the four soil samples had reported TRPH concentrations exceeding the industrial SCTL of 2500 mg/kg, the highest being 6700 mg/kg, and one groundwater sample had a reported TRPH concentration of 11000 µg/L, exceeding the GCTL of 5000 µg/L.

1.8.3 <u>Field Notes from Subsurface Contamination Search (PWC, 1999)</u>

During late August to early September 1999, Public Works Center (PWC) Norfolk screened the soil in and around the area surrounding the removed UST and the two existing 10,000-gallon fuel oil ASTs in search of contamination. A letter report containing field notes and laboratory soil analytical data compiled during the investigation is provided in Appendix D. Fourteen soil samples from five boring locations were collected and analyzed for diesel range organics (DRO). DRO was identified in six of the soil samples, all located west or northwest of the former UST location in the direction of Building 234. The highest concentration was 8900 mg/kg DRO in a sample collected 4 to 6 ft bls northwest of the removed tank. In conclusion, PWC hypothesized that contamination at the site was following a “linear track,” noting that it (contamination) “was observed to diminish to zero only a few feet from known ‘hot spots’,” and suspected that a subsurface utility conduit was acting as a transmitter of contaminants, even though no hard evidence of such contaminant geometry was presented.

1.8.4 <u>Letter Closure Report (EEG, 2002)</u>

The two 10,000-gallon fuel oil ASTs, located south of the former waste oil UST, were removed by EEG in November 2002. A copy of the Letter Closure Report, submitted on December 17, 2002, is included in Appendix E. Initially, 200 gallons of a diesel fuel/rainwater mixture were pumped from the two tanks. The tanks and piping were then washed, generating 1600 gallons of petroleum contact water. The two quantities of wastewater were tracked by individual manifests and disposed offsite. A soil and groundwater quality investigation was not conducted in the area underlying the ASTs after their removal. No reference to the structural condition of the ASTs is provided.

1.9 PURPOSE OF CURRENT INVESTIGATION

The objective of the SA was to assess the extent and magnitude of soil and/or groundwater contamination at Site 250 resulting from past fuel storage at the site. The data collected during the investigation was used to prepare this SAR as required by Chapter 62-770.600, FAC. This SAR provides a characterization of site conditions from which to base future courses of action. A SAR summary sheet is provided as Appendix A.

2.0 SUBSURFACE INVESTIGATION METHODS

2.1 QUALITY ASSURANCE

The site investigation was conducted in general accordance with the FDEP-approved TtNUS Comprehensive Quality Assurance Plan.

2.2 ASSESSMENT STRATEGY

Soil and groundwater quality were assessed at the site in two phases: a screening phase (Phase I) in which soil and groundwater grab samples were collected by DPT methods and analyzed by an on-site mobile laboratory; and a second phase (Phase II) in which additional soil samples were collected for fixed-base laboratory analysis and permanent monitoring wells were installed at optimum locations based upon Phase I analytical results. Groundwater samples collected from the permanent monitoring wells for analysis of GAG/KAG constituents by a fixed-base laboratory.

2.3 DETERMINATION OF GROUNDWATER GRADIENT

During the week of August 11 to 15, 2003, 21 soil borings (SB-01 through SB-21) were advanced by DPT in the area of concern as part of the Phase I assessment. Four of the borings (SB-02, SB-04, SB-05, and SB-06) were converted to temporary piezometers (PZ-01, PZ-02, PZ-03, and PZ-04) for the purpose of estimating groundwater flow direction in the shallow zone of the surficial aquifer underlying the site. The top-of-casing (TOC) elevations of the four piezometers were surveyed relative to a selected temporary benchmark (TBM) on site. The TBM was assigned an arbitrary elevation of 25 ft msl. Depth-to-water was measured from the TOC of the four piezometers using an electronic water level indicator. The relative water table elevation at each location was calculated by subtracting the depth-to-water measurement from the surveyed TOC elevation, and a groundwater flow direction (potentiometric) map was generated from the water table elevation data. This information was used to design the monitoring well array.

2.4 SOIL QUALITY ASSESSMENT

2.4.1 Soil Borings

Locations of the 21 soil borings completed during the Phase I assessment and of 10 additional borings completed during Phase II are shown on Figure 2-1. The borings were advanced to a depth of 5 ft bls or slightly into the water table, whichever occurred first, using a stainless steel, 3-inch inside diameter (ID) hand-auger assembly. Boring SB-11 was advanced to a depth of 40 ft bls to establish a site lithologic profile. From the base of the hand-augered section (5 ft bls) to total depth (40 ft bls), SB-11 was

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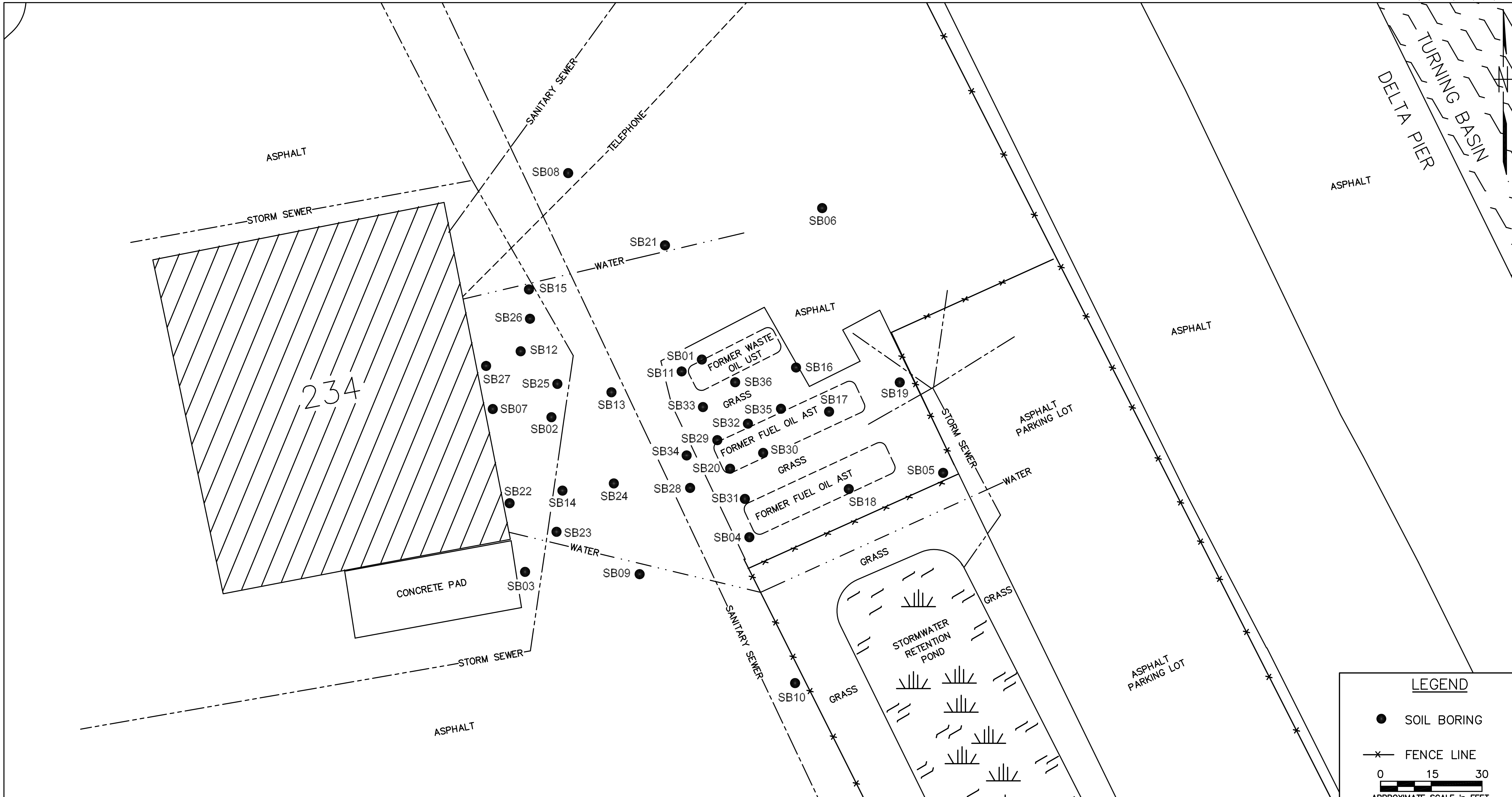

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SOIL BORING LOCATIONS
SITE 250
SITE ASSESSMENT REPORT
NAVAL STATION MAYPORT
MAYPORT, FLORIDA

CONTRACT NO. 5863
APPROVED BY DATE
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advanced using a DPT push rod attached to a GeoProbe. A 5-ft long, stainless steel macrocore sampler lined with plastic sleeves was attached to the end of the DPT push rod. Continuous samples were collected with the macrocore tool from 5 to 40 ft bls. A lithologic description of materials retrieved in the macrocores is also provided in Appendix F.

2.4.2 Field Screening Procedures

Soil samples were collected from the hand auger bucket in the unsaturated zone at 1-ft or 2-ft vertical intervals beginning at 1 ft bls. Samples were retained for field screening with an OVA-FID at each of the soil boring locations except SB-11. It was not unusual to encounter saturated sediments at depths of 3 ft bls or shallower. Consequently, only one sample (1 ft bls) was collected for soil vapor headspace analysis at many locations, and the maximum collected at any location was two samples.

Soil vapor analyses were performed in accordance with the headspace screening method described in Chapter 62-770.200(2), FAC. Results of the soil vapor screening survey conducted at Site 250 are discussed below in Section 3.2.

2.4.3 Soil Sampling Strategy for Laboratory Analysis (Phase I)

2.4.3.1 Mobile Laboratory

During the Phase I investigation, 19 soil samples were submitted to KB Laboratories (on-site mobile laboratory) for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX); methyl tertiary-butyl ether (MTBE); naphthalene; 1-methylnaphthalene; 2-methylnaphthalene; and TRPH. One sample from each soil boring except SB-11 and SB-21 was submitted in a 4-ounce glass jar provided by KB Laboratories. The sample selected for mobile laboratory analysis at each location was a split of the sample exhibiting the highest organic vapor reading. If organic vapors were not detected at a particular location, the sample collected from immediately above the water table was selected.

2.4.3.2 Fixed-Base Laboratory

During the Phase I assessment, three soil samples were submitted to Environmental Conservation Laboratories, Inc. (ENCO) of Jacksonville, Florida, a fixed-base laboratory, for analysis of GAG/KAG constituents, which included VOCs, PAHs, and TRPH. Soil samples submitted for fixed-base laboratory analysis were based on field screening results. The three samples selected were the one producing the highest headspace measurement (high range), one containing no organic vapors (low range), and the one exhibiting intermediate organic vapor content (medium range) as specified in Chapter 62-770.600(3)(e), FAC.

2.4.4 Soil Sampling Strategy for Laboratory Analysis (Phase II)

On November 25, 2003, 10 additional soil borings (SB-22 through SB-31) were hand-augered to the soil/water interface and field-screened for organic vapors using the same procedure described above in Section 2.4.2. At each boring location, one sample was selected for laboratory analysis using the same strategy as that used in Phase I (Section 2.4.3.1). Selected samples were packed on ice and shipped via overnight courier to Katahdin Analytical Services, Inc. (Katahdin) in Westbrook, Maine for analysis of VOCs, PAHs, and TRPH.

Soil boring SB-29 recorded a TRPH value of 12,000 mg/kg which prompted the additional collection of five more soil samples that surrounded this impacted area on May 11 and 12, 2004. Soil samples were collected for laboratory analysis of TRPH using the FL-PRO Method and PAHs using USEPA Method 8270 SIM. The samples were analyzed by ENCO located in Jacksonville, Florida. These parameters were selected based on historical and recent analytical data.

2.5 GROUNDWATER ASSESSMENT METHODS

2.5.1 DPT Grab Samples (Phase I)

The primary purpose of the DPT investigation (August 11 to 15, 2003) was to collect groundwater grab samples at specified depth intervals and, in conjunction with quick turnaround mobile laboratory analyses, estimate the lateral and vertical extent of contamination in the surficial aquifer. Grab samples were collected by DPT (GeoProbe) from the upper 4 ft of the saturated zone at 20 shallow boring locations and from depths of 16 to 20 ft, 26 to 30 ft, and 36 to 40 ft bls at SB-11. The samples were collected using a detachable drive tip attached to a 48-inch, retractable stainless steel well screen encased in the lead drive casing. After the water sampler was advanced into the designated zone, the casing was withdrawn 48 inches to allow influx of groundwater to the retractable screen. For groundwater recovery, Teflon® tubing was inserted into the probe and connected to a peristaltic pump. Several screen volumes were then pumped from the probe in order to reduce turbidity. After purging, groundwater samples were collected by pumping directly into 40-milliliter vials. The samples were immediately delivered to the on-site mobile laboratory for analysis of BTEX, MTBE, naphthalene, 1-methylnaphthalene, 2-methylnaphthalene, and TRPH.

2.5.2 Permanent Monitoring Wells (Phase II)

Six permanent monitoring wells [MPT-250-MW-01 (MW-01), MW-02, MW-03, MW-04, MW-05, and MW-06D] were installed at the site between August 19 and August 22, 2003, by Partridge Well Drilling, Inc. (Partridge) of Jacksonville, Florida under TtNUS supervision. Wells MW-01 through MW-05 are shallow monitoring wells with 10-ft screened sections intersecting the water table, and well MW-06D is a deep monitoring well with a submerged 5-ft screen set 35 to 40 ft bls. Monitoring well locations are shown on Figure 2-2.

2.5.2.1 Drilling Method

A posthole digger was used to excavate boreholes from ground surface to a depth of 5 ft bls to verify absence of subsurface utilities. From that point (5 ft bls) to total depth, boreholes were advanced using 4 ¼-inch ID hollow stem augers (HSAs) attached to a truck-mounted drill rig. Soil boring logs containing descriptions of cuttings generated during drilling are provided in Appendix F.

2.5.2.2 Construction and Development

Boreholes for the shallow wells were advanced to total depths of approximately 13 ft bls and that of the deep well to approximately 40 ft bls. Monitoring wells constructed of 2-inch diameter, 0.010-inch millimeter slotted Schedule 40 polyvinyl chloride (PVC) screen attached to a suitable length of solid riser (flush threaded) were inserted through the HSAs after attaining total depth. Shallow wells were constructed with 10-ft well screens and the deep well with a 5-ft screen. Graded 20/30-silica sand was poured from the surface between the PVC well and HSAs as the augers were being removed from the borehole to create a filter pack in the annular space between borehole and screened section of the monitoring well. During construction of the shallow wells, the filter pack was poured into the annular space to a depth approximately 12 inches above the top of the screen (i.e., 2.0 ft bls) and was capped by approximately 12 inches of 30/65 fine sand. The remaining annular space from the top of the fine sand seal to within 6 inches of ground surface was filled with Type I Portland cement grout. In the deep well, 20/30 filter sand was poured to a depth of 33 ft bls, or 2 ft above the top of the screen, and was capped with 2 ft of 30/65 fine sand. The remaining annular space was filled with Type I Portland cement grout to within 6 inches of land surface. Each well was completed at the surface with an 8-inch diameter steel manhole equipped with bolt-down cover. Manholes were secured in place with concrete pads 2-ft square and 6 inches thick. A locking, expansible gasket cap was inserted at the top of the PVC casing after well installation. A schematic diagram showing details of well construction (shallow and deep) is provided as Figure 2-3. Construction diagrams for the individual wells are provided in Appendix G.

Wells were developed a minimum 24 hours after completion by a TtNUS or Partridge representative using either a submersible Whale pump or centrifugal pump. Wells were developed until field measurements became stable and purge water virtually clear. Water quality stabilization was determined using the following criteria: temperature ±5 degrees Celsius (°C), pH ±0.1 unit and specific conductance ±10 micro-ohms per centimeter. All development water was containerized for disposal in 55-gallon steel drums. Monitoring well development records are provided with other field data forms in Appendix H.

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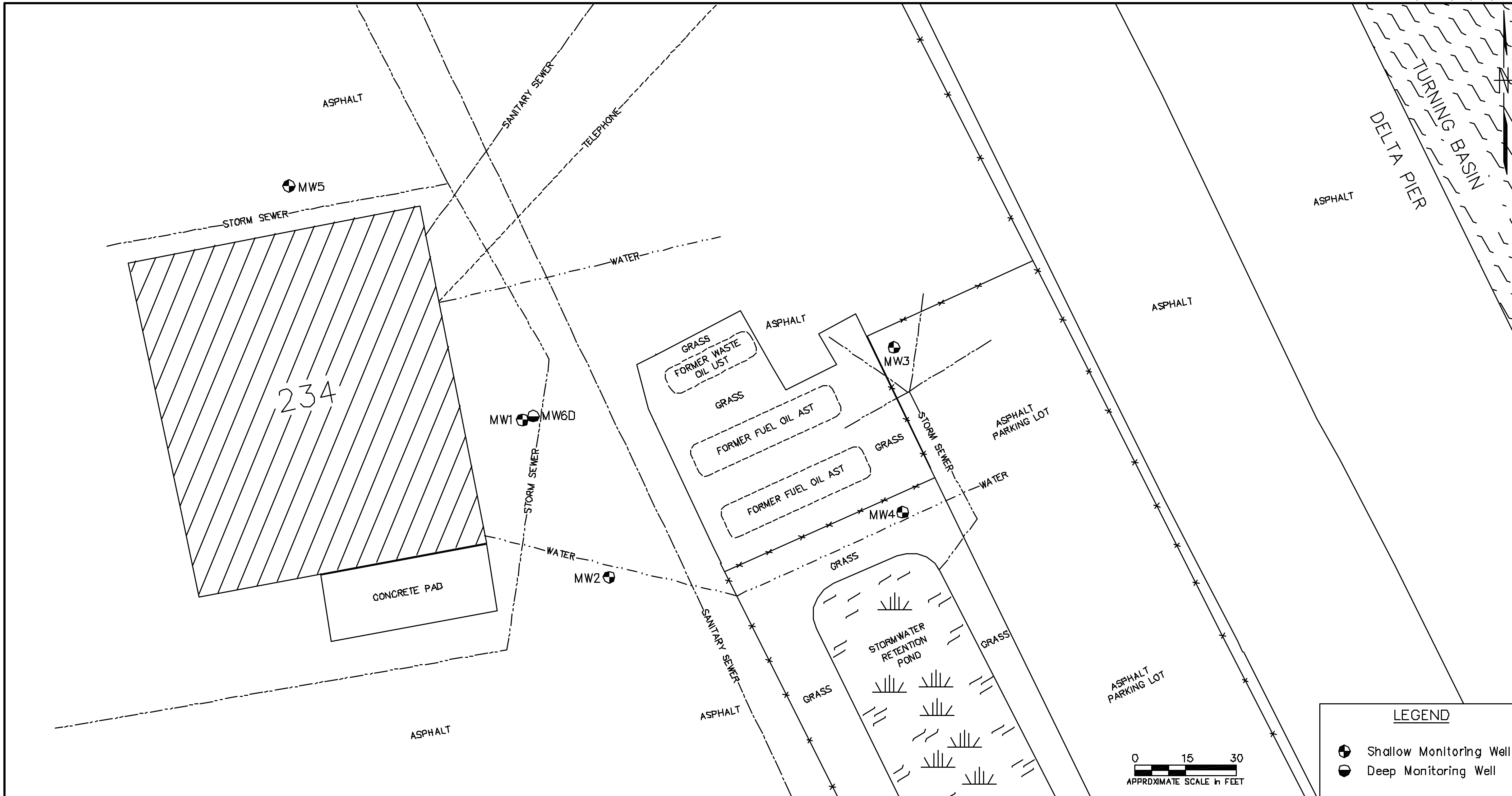

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY LLK DATE 10/24/03
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COST/SCHED-AREA
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MONITORING WELL LOCATIONS
SITE 250
SITE ASSESSMENT REPORT
NAVAL STATION MAYPORT
MAYPORT, FLORIDA

CONTRACT NO. 5863
APPROVED BY DATE
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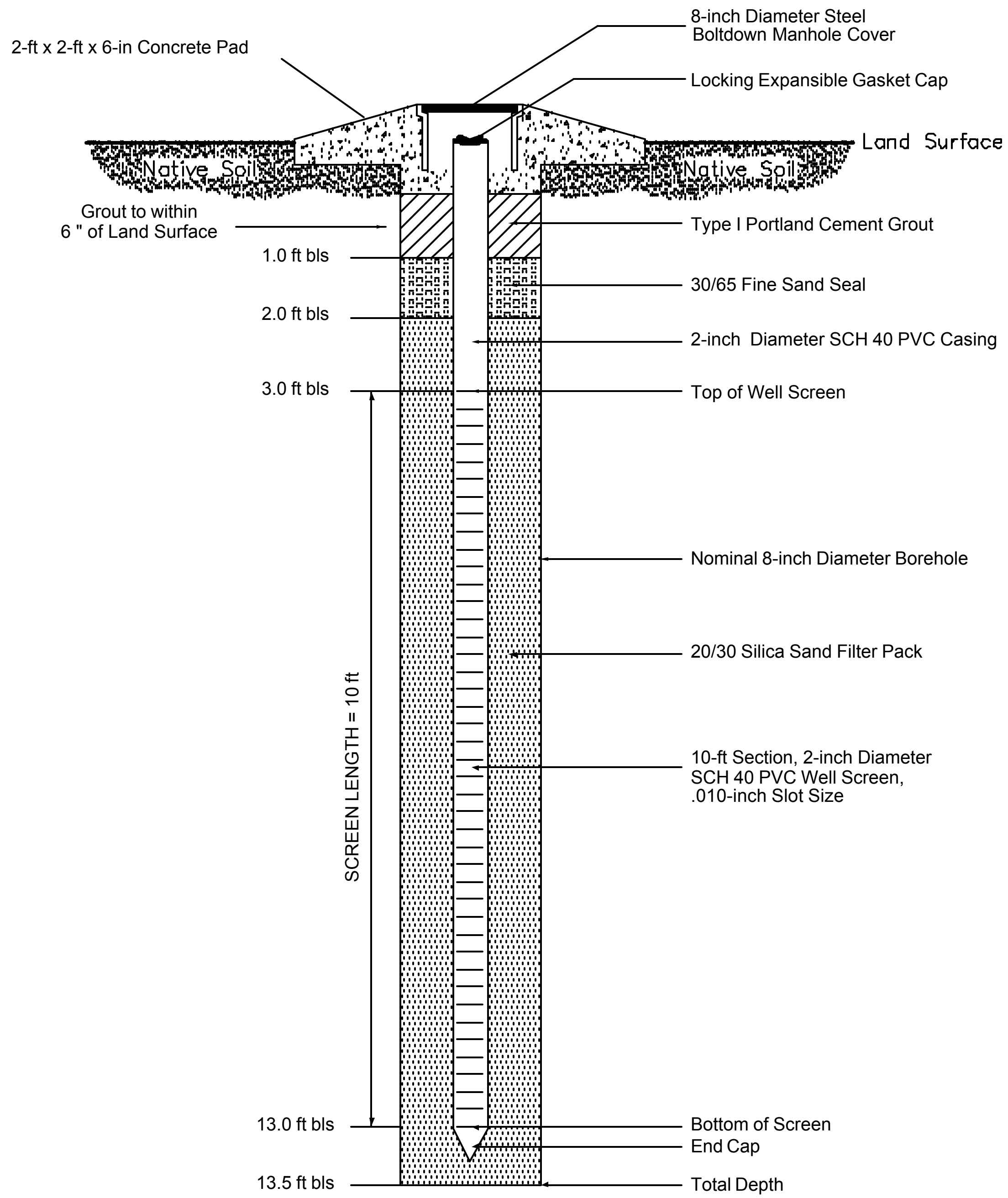
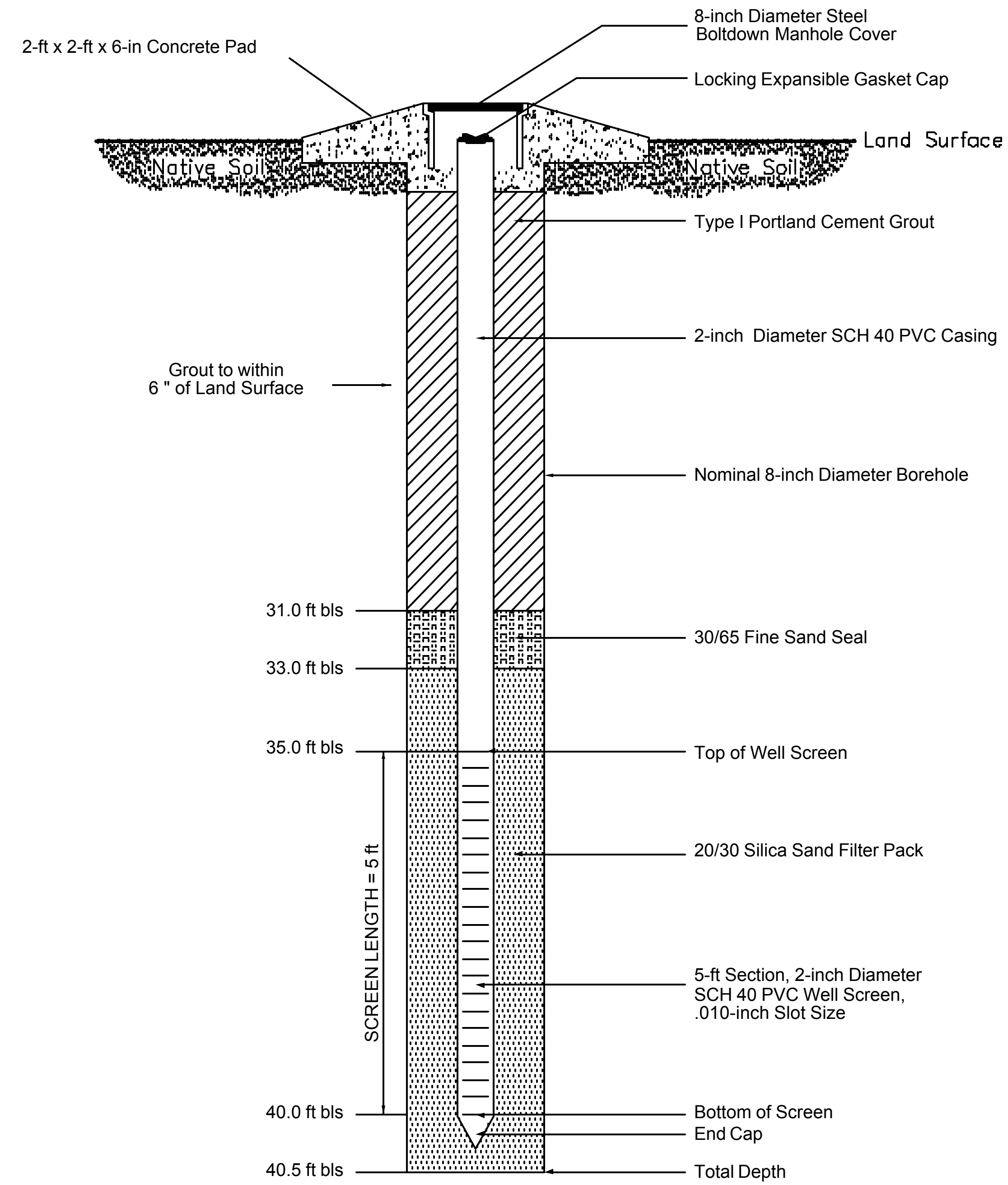
DRAWING NO. FIGURE 2-2
REV. 0

FORM CADD NO. SDIV_BH.DWG – REV 0 – 1/20/98



TYPICAL CONSTRUCTION DETAIL
OF SHALLOW MONITORING WELL



CONSTRUCTION DETAIL OF DEEP
MONITORING WELL MW-6D

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DRAWN BY LLK DATE 10/23/03
CHECKED BY DATE
COST/SCHED-AREA
SCALE AS NOTED

MONITORING WELL CONSTRUCTION DETAILS
SITE 250
SITE ASSESSMENT REPORT
NAVAL STATION MAYPORT
MAYPORT, FLORIDA

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APPROVED BY DATE
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DRAWING NO. FIGURE 2-3 REV. 0

FORM CADD NO. SDIV_BH.DWG – REV 0 – 1/20/98

2.5.2.3 Groundwater Sampling

On September 23, 2003, TtNUS personnel collected groundwater samples from five of the six new monitoring wells. Monitoring well MW-03 was inaccessible on that day and was sampled two weeks later on October 7, 2003. Sampling activities were documented in a site-specific field logbook. Groundwater samples were collected from five of the wells a second time approximately two months later on November 24, 2003, upon recommendation of the NAVSTA Mayport Partnering Team.

Groundwater sampling was conducted in general accordance with Standard Operating Procedures adopted by FDEP in 2002. A minimum one well volume was pumped from each shallow well (partially submerged screen) and a minimum composite volume of the pump, associated tubing, and flow cell was pumped from the deep well (fully submerged screen) using a peristaltic pump and the low flow quiescent purging method. After purging of these initial quantities, purging was continued and field parameters pH, specific conductance, dissolved oxygen, temperature, and oxidation/reduction potential were measured periodically (minimum 3-minute intervals) using a YSI 556 instrument, and turbidity was measured using a LaMotte 2020 turbidimeter. Purging was considered complete when three consecutive measurements were within the following limits:

- Temperature ± 0.2 °C
- pH ± 0.2 Standard Units
- Specific conductivity ± 5 percent of previous reading(s)
- Dissolved oxygen not greater than 20 percent of saturation at field measured temperature
- Turbidity less than or equal to 20 Nephelometric Units.

Groundwater sampling logs and low flow purge sheets compiled during purging and sampling of the wells during both sampling events are provided in Appendix H.

After the first sampling event, samples were immediately placed on ice and delivered to ENCO in Jacksonville, Florida the following morning under proper chain-of-custody and preservation (4 °C) protocol. Samples were analyzed for VOCs using USEPA Method 8260, PAHs using USEPA Method 8270, ethylene dibromide using USEPA Method 504.1, lead using USEPA Method 200.7, and TRPH using FL-PRO.

2.6 ADDITIONAL SAMPLING TO PHASE II OF THE SOIL INVESTIGATION

On November 5, 2003, results of the soil and groundwater analyses from the DPT and Phase II investigations were presented to the NAVSTA Mayport Partnering Team by TtNUS. Due to differences in analytical results reported by the mobile laboratory (Phase I) as opposed to those reported by the fixed-base laboratory (Phase II), the NAVSTA Mayport Partnering Team and NAVFAC EFD SOUTH decided that an additional round of soil and groundwater sampling was necessary at the site in order to generate a viable database from which to determine a future course of action.

Consequently, TtNUS representatives revisited the site on November 24 to 25, 2003. A second round of groundwater samples was collected from five of the newly-installed wells on November 24, 2003. The sixth well (MW-03) was again inaccessible and could not be sampled. Groundwater sampling procedures and analyses were the same as those described above in Section 2.5.2.3. After this second groundwater sampling event, samples were shipped to Katahdin and analyzed for PAHs and TRPH only.

TtNUS representatives hand-augered 10 additional borings (SB-22 through SB-31) to the soil/water interface on November 25, 2003. Locations of these all borings are shown on Figure 2-1. The same field screening procedure was used as that described above in Section 2.4.2, and the soil sampling strategy for laboratory analysis was the same as that described in Section 2.4.3.1 except that the samples were shipped to a fixed-base laboratory (Katahdin) for analysis rather than being analyzed by an on-site mobile laboratory. The soil samples for this phase were collected above the capillary region and analyzed for TRPH using FL-PRO and PAHs using USEPA Method 8270 SIM. These analyses were chosen based on historical exceedances of SCTLs and the storage of fuel oil.

Phase III was needed to further define an area of impacted soil identified during Phase I and II. During the March 2004 NAVSTA Mayport Partnering Team meeting in Jacksonville, Florida, it was proposed that a statistical model analysis be performed to determine if the site posed unacceptable risks. The underlying reason behind this decision was that a portion of the impacted soils identified are beneath utilities adjacent to a storm sewer line, which may be a source for TRPH identified in soils in that area. It was also decided that the impacts identified surrounding soil boring SB-29 should be delineated to residential or below residential SCTLs for pre-site characterization. Five additional soil samples (SB-32 through SB-36) were collected on May 11 and 12, 2004, from 1 ft bls and above the capillary which region, which occurred between 2.5 and 3 ft bls. These samples were analyzed for TRPH using FL-PRO and PAHs using USEPA Method 8270 SIM by ENCO Laboratories located in Jacksonville, Florida.

3.0 RESULTS OF INVESTIGATION

3.1 SITE GEOLOGY AND HYDROGEOLOGY

3.1.1 Lithology

The most resolute description of material underlying Site 250 was obtained during retrieval of 5-ft macrocore samples collected by DPT during advancement of deep boring SB-11 to 40 ft bls on August 12, 2003. Soil cuttings generated during excavation of monitoring well boreholes by HSAs were also described by TtNUS' on-site scientist. Soil borings logs containing these lithologic descriptions are provided in Appendix F.

Soils encountered in the upper 40 ft were exclusively clastic, consisting of (in order of abundance) fine and very fine sand, shell hash, and silt and clay. Silt and clay components were disseminated; thus, no confining units were encountered. Generally speaking, little to no silt or clay was encountered in the upper 25 ft, and the highest silt-plus-clay content (approximately 5 to 10 percent) occurred between 25 and 30 ft bls. Shell hash was most abundant from 5 to 20 ft bls and from 30 to 40 ft bls. Sediments were light brown to white in the upper 20 ft and became light greenish brown to olive gray from 20 to 40 ft bls. This area near the Mayport turning basin has been backfilled.

3.1.2 Groundwater Flow Direction

Using the method described in Section 2.2, the direction of groundwater flow in the surficial aquifer underlying the site was estimated to be easterly toward the turning basin. This preliminary determination of groundwater flow direction using data from temporary piezometers was one of the criteria used in selecting permanent monitoring well locations. After installation of the permanent monitoring wells, direction of groundwater flow was determined using the wells as control points in the same fashion that the piezometers were used in the preliminary determination. Surveyed TOC elevations of the permanent monitoring wells; depth-to-water measurements obtained on October 29, 2003, and November 26, 2003; and water table elevation values for these two sets of measurements are presented in Table 3-1. Groundwater elevation contour maps (potentiometric map) generated from the October 29 and November 26, 2003, data are provided as Figures 3-1 and 3-2, respectively, which verify an overall easterly flow direction. Based on the 1997 USGS report, there is tidal influence to the surficial aquifer in the area of the site (USGS, 1997).

Table 3-1
Water Table Elevation Data

Site Assessment Report, Site 250
Naval Station Mayport
Mayport, Florida

Well ID Number MPT-250-	Total Well Depth (ft)	TOC Elevation (ft msl)	October 29, 2003		November 26, 2003	
			Depth to Water Below TOC (ft)	Water Table Elevation (ft msl)	Depth to Water Below TOC (ft)	Water Table Elevation (ft msl)
MW-01	12.1	6.43	3.53	2.90	3.99	2.44
MW-02	13	6.43	3.47	2.96	4.00	2.43
MW-03	13.2	7.27*	4.59	2.68	5.07	2.20
MW-04	13	7.27	4.32	2.95	5.00	2.27
MW-05	12.2	5.99	3.05	2.94	3.46	2.53
MW-06D	40	6.38	3.42	2.96	3.57	2.81

Notes:
* Determined from TtNUS Survey, November 26, 2003.

3.1.3 Aquifer Classification and Characteristics

The State of Florida classifies the surficial aquifer underlying the site as G-II. Previous USGS aquifer test data indicate that the average hydraulic conductivity of the surficial aquifer is approximately 4.34 ft per day (ft/day) (USGS, 1997).

The horizontal groundwater (hydraulic) gradient across the site was evaluated from water level data listed in Table 3-1 and shown on Figures 3-1 and 3-2. Control points used for estimating horizontal gradient were MW-1 (upgradient) and MW-3 (downgradient). The average horizontal hydraulic gradient beneath the site, calculated from potentiometric contours depicted on Figure 3-1, was determined to be 0.0021 ft per ft (ft/ft).

Based on information provided by Driscoll (Driscoll, 1986) and on lithologic descriptions of material encountered during the current investigation, the effective porosity of surficial aquifer sediments was estimated to be 0.30.

Using Darcy's Law the groundwater velocity at the site was calculated.

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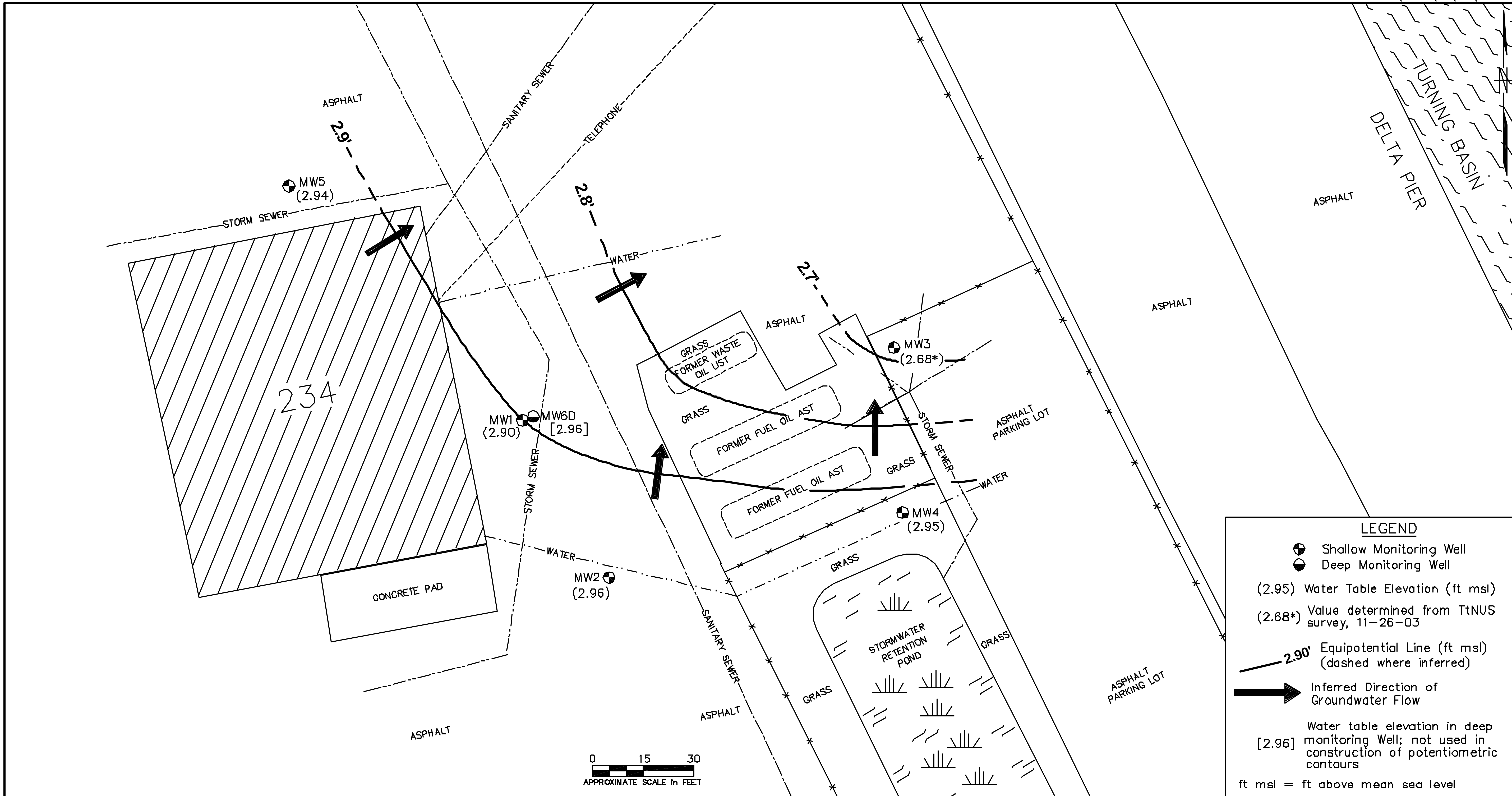

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY LLK DATE 11/3/03
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COST/SCHED-AREA
SCALE AS NOTED

GROUNDWATER ELEVATION CONTOUR MAP
OCTOBER 29, 2003
SITE 250
SITE ASSESSMENT REPORT
NAVAL STATION MAYPORT
MAYPORT, FLORIDA

CONTRACT NO. 5863
APPROVED BY DATE
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REV. 0

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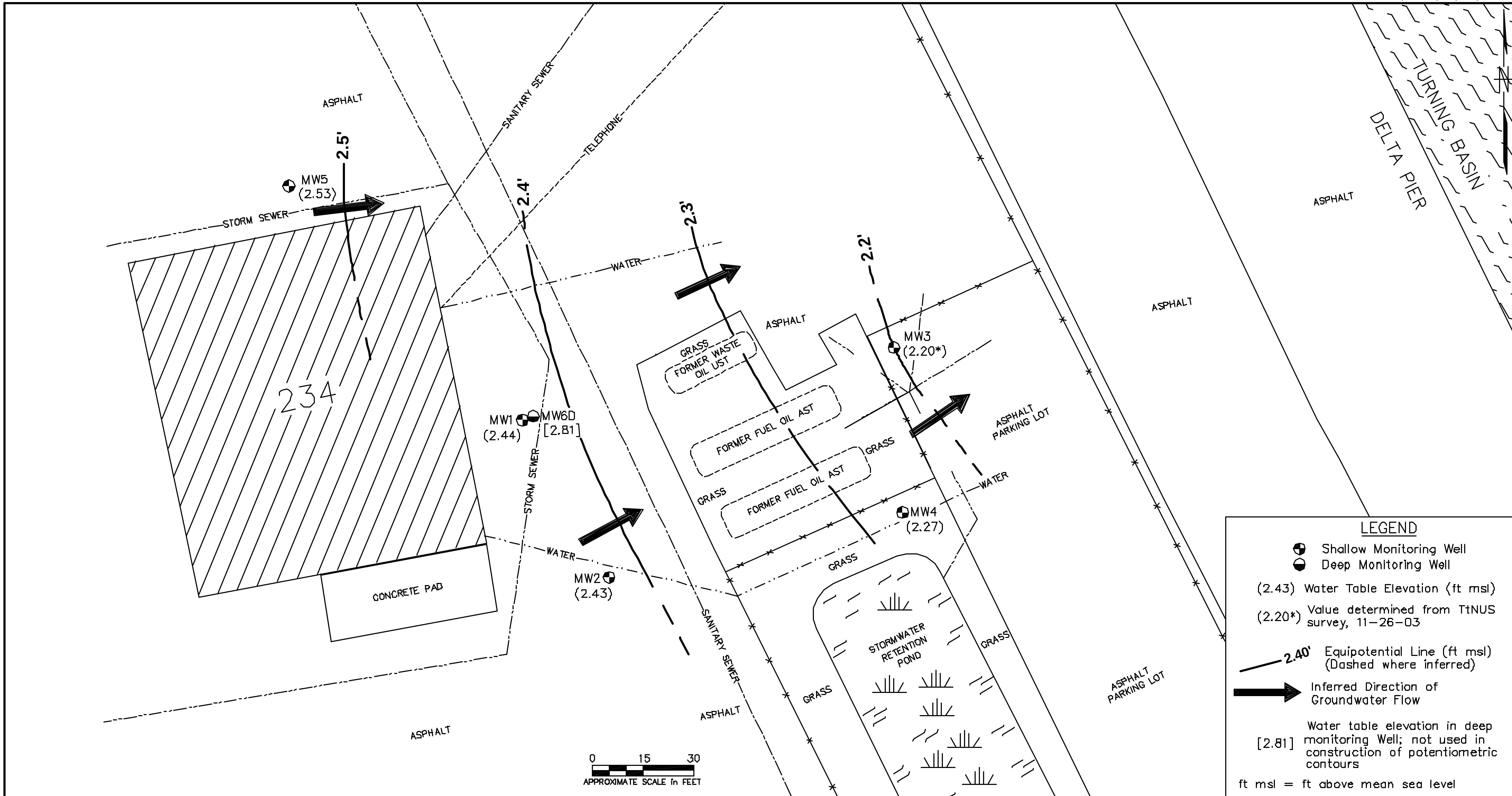

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DRAWN BY LLK DATE 12/01/03
CHECKED BY DATE
COST/SCHED-AREA
SCALE AS NOTED

GROUNDWATER ELEVATION CONTOUR MAP
NOVEMBER 26, 2003
SITE 250
SITE ASSESSMENT REPORT
NAVAL STATION MAYPORT
MAYPORT, FLORIDA

CONTRACT NO. 5863
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 3-2 REV. 0

FORM CADD NO. SDIV_BH.DWG - REV 0 - 1/20/98

Darcy's Law may be expressed as follows:

$$V = \frac{(K \times I)}{n}$$

where: V = average seepage velocity
K = hydraulic conductivity
n = effective porosity
I = average hydraulic gradient

Using a hydraulic conductivity of 4.34 ft/day, a hydraulic gradient of 0.0021 ft/ft, an inferred effective porosity value of 0.30, and Darcy's law, the groundwater seepage velocity across the site was calculated at 0.0304 ft/day or 11.096 ft per year in a general easterly direction.

Depth-to-water measurements obtained at the well pair MW-01/MW-06D indicate an upward vertical hydraulic gradient within the surficial aquifer underlying Site 250. The elevation of the potentiometric surface within the deep zone, relative to mean sea level was, on average, 0.215 ft higher than that of the shallow zone.

3.2 SOIL SCREENING RESULTS

Soil samples were screened in the field for organic vapor content using methods discussed in Section 2.4.2. Results of the soil vapor survey are listed on Table 3-2 and illustrated on Figure 3-3. During the first site mobilization (August 11 to 14, 2003), samples collected from 20 borings (SB-01 through SB-21, excluding SB-11) were screened. Four soil samples from these 20 borings produced net organic vapor readings exceeding 50 ppm: SB-14, 1 ft bls (405 ppm); SB-02, 1 ft bls (100 ppm); SB-20, 3 ft bls (80 ppm); and SB-12, 1 ft bls (76 ppm). Soil borings SB-02, SB-12, and SB-14 are located adjacent to a storm sewer west of the former tank hold. One location, SB-20, is located to the west of the former tank hold.

During the second site mobilization (November 25, 2003), samples from 10 additional borings (SB-22 through SB-31) were screened for organic vapors. No measurements equal to or exceeding 50 ppm were recorded. The highest net organic vapor reading registered during this event was 14 ppm (SB-22, 3 ft bls and SB-29, 3 ft bls).

Table 3-2
Soil Vapor Headspace Measurements

Site Assessment Report, Site 250
Naval Station Mayport
Mayport, Florida

Soil Boring Number	Date of Measurement	Sample Depth (ft bls)	Headspace Readings (ppm)		
			Unfiltered Reading	Carbon Filtered Reading	Net Reading
SB-01	8/11/2003	1	0	0	0
		3	0	0	0
SB-02	8/11/2003	1	116	16	**100***
		3			Moist NS
SB-03	8/11/2003	1	0	0	0
		3	50	50	0
SB-04	8/11/2003	1	0	0	0
		3	0	0	0
SB-05	8/11/2003	1	0	0	0
		3	0	0	0
SB-06	8/11/2003	1	1	0	1
		3	0	0	0
SB-07	8/12/2003	1	0	0	0
		3	0	0	0
SB-08	8/12/2003	1	0	0	0
		3	0	0	0
SB-09	8/12/2003	1	0	0	0
		3			Moist NS
SB-10	8/12/2003	1	0	0	0
		3			Moist NS
SB-11	08/12/2003	1	0	0	0
		3			Moist NS
SB-12	8/12/2003	1	85	9	**76***
		3			Moist NS
SB-13	8/12/2003	1	0	0	0
		3			Moist NS
SB-14	8/12/2003	1	411	6	**405***
		3			Moist NS
SB-15	8/13/2003	1	0	0	0
		3			Moist NS
SB-16	8/14/2003	1	0	0	0
		3	0	0	0
SB-17	8/14/2003	1	0	0	0
		3	0	0	0
SB-18	8/14/2003	1	0	0	0
		3	0	0	0
SB-19	8/14/2003	1	0	0	0
		3	0	0	0
SB-20	8/14/2003	1	0	0	0
		3	85	5	**80**
SB-21	8/15/2003	1	0	0	0
		3	0	0	0

Notes:
Moist NS = Soil was too moist due to groundwater influence to collect an OVA sample.
* = petroleum odor associated with sample

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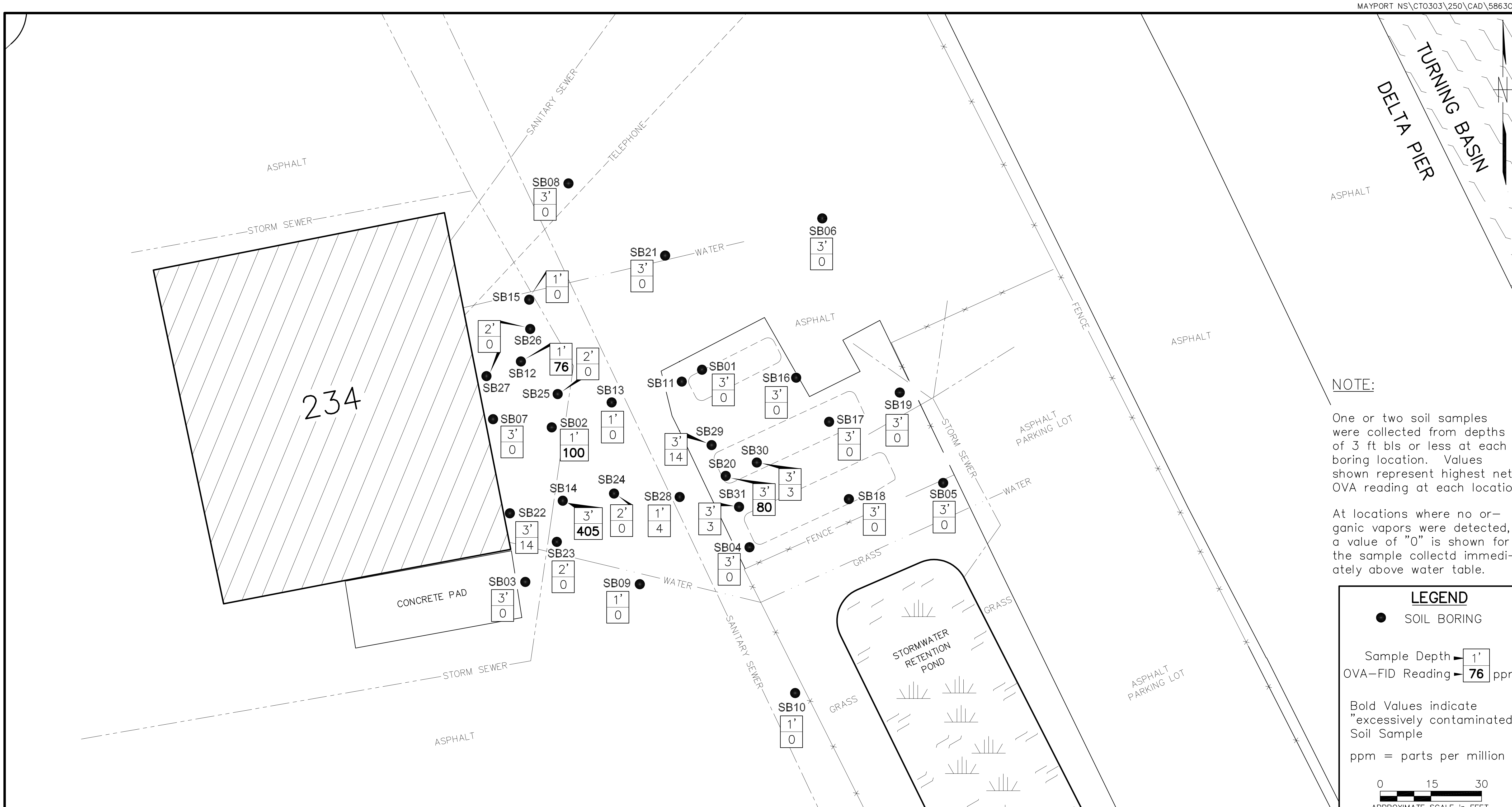

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY LLK DATE 11/5/03
CHECKED BY DATE
COST/SCHED–AREA
SCALE AS NOTED

SOIL VAPOR FIELD SCREENING RESULTS
SITE 250
SITE ASSESSMENT REPORT
NAVAL STATION MAYPORT
MAYPORT, FLORIDA

CONTRACT NO. 5863
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 3–3 REV. 0

FORM CADD NO. SDIV_BH.DWG – REV 0 – 1/20/98

3.3 SOIL SAMPLE ANALYTICAL RESULTS

3.3.1 Mobile Laboratory – Phase I

Nineteen soil samples were analyzed by the mobile laboratory for VOCs with an extended run time to identify naphthalene compounds during the Phase I assessment (August 11 to 15, 2003). Constituents identified included naphthalene, 1-methylnaphthalene, 2-methylnaphthalene, and TRPH. One or more of these constituents were identified in 6 of the 19 samples analyzed. Detected concentrations are listed in Table 3-3 and illustrated on Figure 3-4. A copy of the analytical report provided by KB Labs is provided in Appendix I.

TRPH was reported at a concentration of 1300 mg/kg in sample SB-14 (1 ft bls), exceeding its residential and leachability SCTLs of 340 mg/kg. This was the only reported value that exceeded residential SCTLs. Concentrations exceeding leachability SCTLs were only identified in SB-14 and SB-02 (1 ft bls), both located near the storm sewer approximately 15 ft from Building 234 (see Figure 3-3). In addition to TRPH, 1-methylnaphthalene was reported at a concentration of 5.7 mg/kg in SB-14, exceeding the leachability SCTL of 2.2 mg/kg. For SB-02, naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene were reported at concentrations of 15, 27, and 29 mg/kg, respectively. The leachability SCTL for naphthalene is 1.7 mg/kg and 6.1 mg/kg for 2-methylnaphthalene.

3.3.2 Fixed-Base Laboratory – Phase I

During the Phase I assessment, three soil samples [SB-14 (1 ft), SB-02 (1 ft), and SB-18 (3 ft)] were submitted to ENCO for analysis as the high-, medium-, and low-range, respectively, based on organic vapor content. The approach to selecting soil samples for fixed-base laboratory analysis during this phase of the investigation is discussed above in Section 2.2.3.2. Detected concentrations reported by the laboratory are listed in Table 3-4, and reported values exceeding SCTLs are illustrated on Figure 3-5. The laboratory report submitted by ENCO is provided in Appendix J.

Laboratory analytical results somewhat correlated with field screening results. The notable exception was that concentrations of TRPH and some PAHs were higher in the medium-range (SB-02) sample compared to the high-range (SB-14) sample. PAHs and TRPH were the most frequently reported analytes. Naphthalene, 1-methylnaphthalene, 2-methylnaphthalene, and TRPH were reported at concentrations equal to or exceeding leachability SCTLs in SB-02, and in each case, the concentration was higher in SB-02 than in SB-14. Concentrations of these four compounds reported in SB-02 were 4.7 mg/kg for naphthalene; 54 mg/kg for 1-methylnaphthalene; 62 mg/kg for 2-methylnaphthalene; and 8100 mg/kg for TRPH. The following two exceedances of SCTLs were reported in SB-14: TRPH at 4000 mg/kg and 1-methylnaphthalene at 6 mg/kg.

Table 3-3
Mobile Laboratory Soil Analytical Results

Site Assessment Report, Site 250
Naval Station Mayport
Mayport, Florida

Compound	FDEP SCTL (mg/kg)			Sample ID, Sample Date, and Sample Interval						
				SB-01	SB-02	SB-03	SB-04	SB-05	SB-06	SB-07
				8/11/2003	8/11/2003	8/11/2003	8/11/2003	8/11/2003	8/11/2003	8/12/2003
	Residential	Industrial	Leachability	3 ft	1 ft	3 ft	3 ft	3 ft	3 ft	1 ft
Constituents (USEPA Method 8021B) (mg/kg)										
Naphthalene	40	70	1.7	<.050	**15**	<.050	<.050	<.050	<.050	<.050
1-Methylnaphthalene	68	470	2.2	<.050	**27**	<.050	<.050	<.050	<.050	<.050
2-Methylnaphthalene	80	560	6.1	<.050	**29**	<.050	<.050	<.050	<.050	<.050
TPH (mg/kg)	340	2500	340	ND	140	ND	ND	4.2	ND	ND

Compound	FDEP SCTL (mg/kg)			Sample ID, Sample Date, and Sample Interval						
				SB-08	SB-09	SB-10	SB-12	SB-13	SB-14	SB-15
				8/12/2003	8/12/2003	8/12/2003	8/12/2003	8/12/2003	8/12/2003	8/14/2003
	Residential	Industrial	Leachability	1 ft	1 ft	3 ft	1 ft	1 ft	1 ft	1 ft
Constituents (USEPA Method 8021B) (mg/kg)										
Naphthalene	40	70	1.7	<.050	<.050	<.050	<.050	<.050	<1.0	<.050
1-Methylnaphthalene	68	470	2.2	<.050	<.050	<.050	0.10	<.050	**5.7**	<.050
2-Methylnaphthalene	80	560	6.1	<.050	<.050	<.050	0.13	<.050	4.7	<.050
TRPH (mg/kg)	340	2500	340	ND	ND	ND	5.3	ND	**1300**	ND

See notes at end of table.

Table 3-3 (Continued)
Mobile Laboratory Soil Analytical Results

Site Assessment Report, Site 250
Naval Station Mayport
Mayport, Florida

Compound	FDEP SCTL (mg/kg)			Sample ID, Sample Date, and Sample Interval				
				SB-16	SB-17	SB-18	SB-19	SB-20
				8/14/2003	8/14/2003	8/14/2003	8/14/2003	8/14/2003
	Residential	Industrial	Leachability	3 ft	3 ft	3 ft	3 ft	3 ft
Constituents (USEPA Method 8021B) (mg/kg)								
Naphthalene	40	70	1.7	<.050	<.050	<.050	<.050	<.050
1-Methylnaphthalene	68	470	2.2	<.050	<.050	0.080	<.050	0.41
2-Methylnaphthalene	80	560	6.1	<.050	<.050	<.050	<.050	0.066
TRPH (mg/kg)	340	2500	340	ND	ND	11	ND	11

Notes:
< = less than
Bolded values iexceed FDEP leachability criteria.
ND = No volatile TRPH peaks detected

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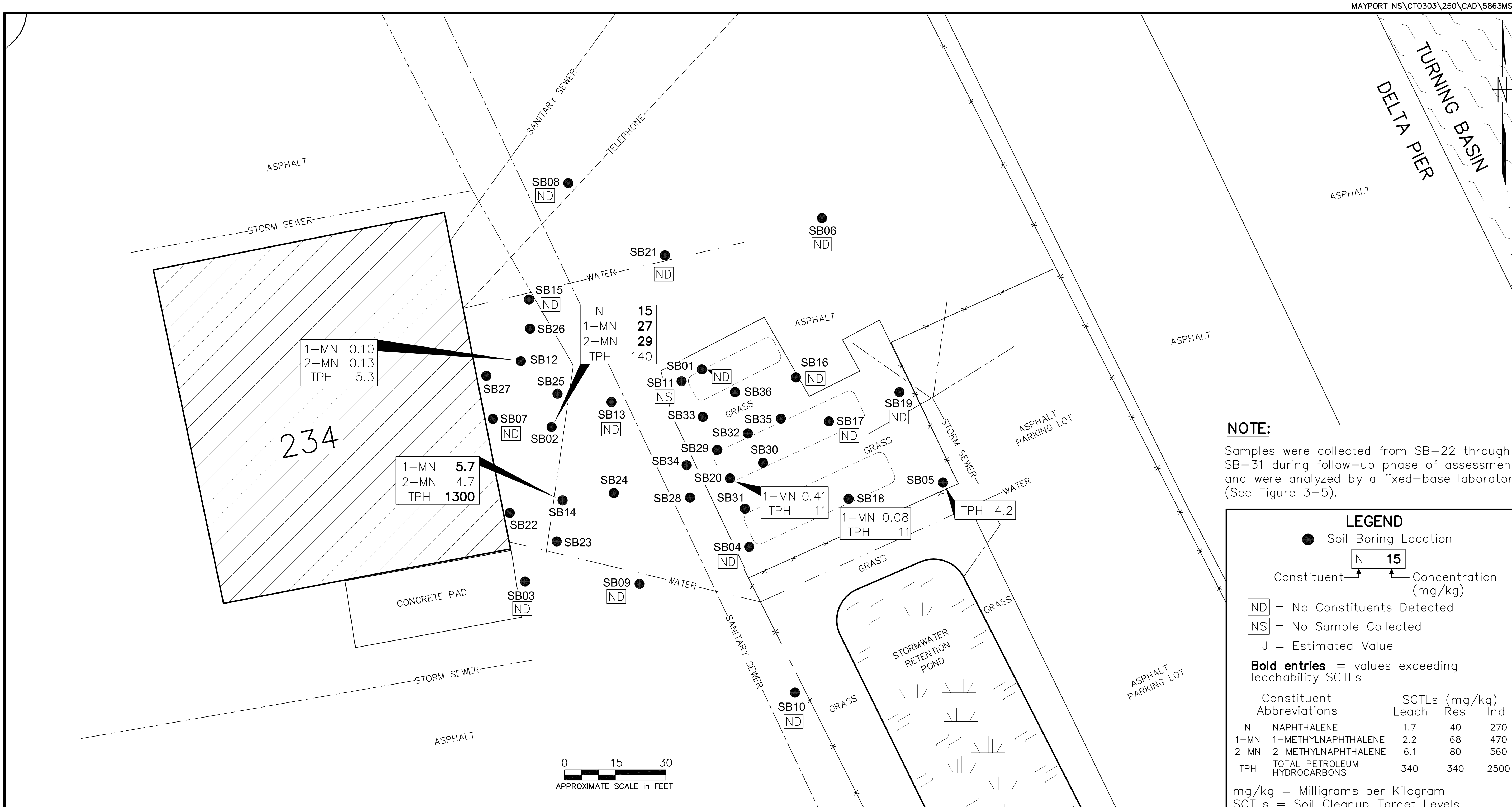

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY LLK DATE 11/06/03
CHECKED BY DATE
COST/SCHED-AREA
SCALE AS NOTED

MOBILE LABORATORY SOIL ANALYTICAL RESULTS
SITE 250
SITE ASSESSMENT REPORT
NAVAL STATION MAYPORT
MAYPORT, FLORIDA

CONTRACT NO. 5863
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 3-4 REV. 1

FORM CADD NO. SDIV_BH.DWG – REV 0 – 1/20/98

Table 3-4
Fixed-Base Laboratory Soil Analytical Results

Site Assessment Report, Site 250
Naval Station Mayport
Mayport, Florida

Compound	FDEP SCTLs			Sample ID/Sample Date/Sample Depth							
				MPT-250							
	Direct Exposure Residential[1]	Leachability Based on Groundwater Criteria[1]	Industrial	SB-02	SB-14	SB-18	SB-22	SB-23	SB-24	SB-25	SB-26
				8/15/2003	8/15/2003	8/15/2003	11/25/2003	11/25/2003	11/25/2003	11/25/2003	11/25/2003
				1 ft	1 ft	3 ft	1 ft	1 ft	1 ft	1 ft	1 ft
VOCs (USEPA Method 8021B) (mg/kg)											
Toluene	380	0.5	2600	<110	<130	2.8	NA	NA	NA	NA	NA
PAHs (USEPA Method 8270) (mg/kg)											
Naphthalene	40	1.7	70	**4.7**	0.27	<0.036	<0.022	<0.021	<0.041	<0.021	<0.021
1-Methylnaphthalene	68	2.2	470	**54**	**6.0**	<0.036	<0.022	<0.021	<0.041	<0.021	<0.021
2-Methylnaphthalene	80	6.1	560	**62**	4.7	<0.036	<0.022	<0.021	<0.041	<0.021	<0.021
Acenaphthylene	1100	27	11,000	0.50	<0.35	<0.036	<0.022	<0.021	<0.041	<0.021	<0.021
Acenaphthene	1900	2.1	18,000	1.5	<0.35	<0.036	<0.022	<0.021	<0.041	<0.021	<0.021
Benzo(a)anthracene	1.4	5	3.2	<0.035	<0.35	<0.036	<0.022	<0.021	<0.041	<0.021	<0.021
Benzo(b)fluoranthene	1.4	4.8	10	<0.035	<0.35	<0.036	<0.022	<0.021	<0.041	<0.021	<0.021
Benzo(k)fluoranthene	15	52	25	<0.035	<0.35	<0.036	<0.022	<0.021	<0.041	<0.021	<0.021
Benzo(a)pyrene	0.1	0.5	8	<0.035	<0.35	<0.036	<0.022	<0.021	<0.041	<0.021	<0.021
Benzo(g,h,i)perylene	2300	41000	32000	<0.035	<0.35	<0.036	<0.022	<0.021	<0.041	<0.021	<0.021
Chrysene	140	450	77	<0.035	<0.035	<0.036	<0.022	<0.021	<0.041	<0.021	<0.021
Indeno(1,2,3-cd)pyrene	1.5	5.3	28	<0.035	<0.35	<0.036	<0.022	<0.021	<0.041	<0.021	<0.021
Fluorene	2200	160	28,000	0.58	0.62	<0.036	<0.022	<0.021	<0.041	<0.021	<0.021
Phenanthrene	2000	250	30,000	0.071	1.0	<0.036	<0.022	<0.021	<0.041	<0.021	<0.021
Anthracene	18000	2500	260,000	<0.035	0.20	<0.036	<0.022	<0.021	<0.041	<0.021	<0.021
Fluoranthene	2900	1200	48,000	<0.035	0.073	<0.036	<0.022	<0.021	<0.041	<0.021	<0.021
Pyrene	2200	880	37,000	<0.035	0.19	<0.036	<0.022	<0.021	<0.041	<0.021	<0.021
FL-PRO (USEPA Method 8270) (mg/kg)											
TRPH	340	340	2500	**8100**	**4000**	71	**1100**	130	75	270	26

See notes at end of table.

Table 3-4 (Continued)
Fixed-Base Laboratory Soil Analytical Results

Site Assessment Report, Site 250
Naval Station Mayport
Mayport, Florida

Compound	FDEP SCTLs			Sample ID/Sample Date/Sample Depth							
				MPT-250							
	Direct Exposure Residential[1]	Leachability Based on Groundwater Criteria[1]	Industrial	SB-27	SB-28	SB-29	SB-30	SB-31	SB-32	SB-32	SB-33
				11/25/2003	11/25/2003	11/25/2003	11/25/2003	11/25/2003	5/11/04	5/11/04	5/11/04
				1 ft	3 ft	3 ft	3 ft	3 ft	1 ft	3 ft	1 ft
VOCs (USEPA Method 8021B) (mg/kg)											
Toluene	380	0.5	2600	NA	NA	NA	NA	NA	NA	NA	NA
PAHs (USEPA Method 8270) (mg/kg)											
Naphthalene	40	1.7	70	<0.021	<0.022	<2.2	<0.021	<0.021	<37	<37	<34
1-Methylnaphthalene	68	2.2	470	<0.021	<0.022	<2.2	<0.021	<0.021	<37	<37	<34
2-Methylnaphthalene	80	6.1	560	<0.021	<0.022	<2.2	<0.021	<0.021	<37	<37	<34
Acenaphthylene	1100	27	11,000	<0.021	<0.022	<2.2	<0.021	<0.021	<37	<37	<34
Acenaphthlene	1900	2.1	18,000	<0.021	<0.022	<2.2	<0.021	<0.021	<37	<37	<34
Benzo(a)anthracene	1.4	5	3.2	<0.021	<0.022	<2.2	<0.021	<0.021	<37	0.110	<34
Benzo(b)fluoranthene	1.4	4.8	10	<0.021	<0.022	<2.2	<0.021	<0.021	0.041	0.044	0.064
Benzo(k)fluoranthene	15	52	25	<0.021	<0.022	<2.2	<0.021	<0.021	<37	<37	<34
Benzo(a)pyrene	0.1	0.5	8	<0.021	<0.022	<2.2	<0.021	<0.021	<37	<37	0.040
Benzo(g,h,i)perylene	2300	41000	32000	<0.021	<0.022	<2.2	<0.021	<0.021	<37	<37	<34
Chrysene	140	450	77	<0.021	<0.022	<2.2	<0.021	<0.021	<37	<37	0.037
Indeno(1,2,3-cd)pyrene	1.5	5.3	28	<0.021	<0.022	<2.2	<0.021	<0.021	<37	<37	<34
Fluorene	2200	160	28,000	<0.021	<0.022	<2.2	<0.021	<0.021	<37	<37	<34
Phenanthrene	2000	250	30,000	<0.021	<0.022	<2.2	<0.021	<0.021	<37	0.280	<34
Anthracene	18000	2500	260,000	<0.021	<0.022	<2.2	<0.021	<0.021	<37	<37	<34
Fluoranthene	2900	1200	48,000	<0.021	<0.022	<2.2	<0.021	<0.021	0.044	0.110	0.040
Pyrene	2200	880	37,000	<0.021	<0.022	<2.2	<0.021	<0.021	<37	0.880	<34
FL-PRO (USEPA Method 8270) (mg/kg)											
TRPH	340	340	2500	200	7.7 J	**12,000**	28	5.4 J	110	**7300**	21

See notes at end of table.

Table 3-4 (Continued)
Fixed-Base Laboratory Soil Analytical Results

Site Assessment Report, Site 250
Naval Station Mayport
Mayport, Florida

Compound	FDEP SCTLs			Sample ID/Sample Date/Sample Depth						
				MPT-250						
	Direct Exposure Residential[1]	Leachability Based on Groundwater Criteria[1]	Industrial	SB-33	SB-34	SB-34	SB-35	SB-35	SB-36	SB-36
				5/11/04	5/11/04	5/11/04	5/11/04	5/11/04	5/12/04	5/12/04
				3 ft	1 ft	2.5 ft	1 ft	3 ft	1 ft	3 ft
VOCs (USEPA Method 8021B) (mg/kg)										
Toluene	380	0.5	2600	NA	NA	NA	NA	NA	NA	NA
PAHs (USEPA Method 8270) (mg/kg)										
Naphthalene	40	1.7	70	<35	<35	<41	<35	<36	<71	<73
1-Methylnaphthalene	68	2.2	470	<35	<35	<41	<35	<36	<71	<73
2-Methylnaphthalene	80	6.1	560	<35	<35	<41	<35	<36	<71	<73
Acenaphthylene	1100	27	11,000	<35	<35	<41	<35	<36	<71	<73
Acenaphthlene	1900	2.1	18,000	<35	<35	<41	<35	<36	<71	<73
Benzo(a)anthracene	1.4	5	3.2	<35	<35	<41	0.083	<36	0.091	<73
Benzo(b)fluoranthene	1.4	4.8	10	0.081	<35	<41	0.160	<36	0.18	<73
Benzo(k)fluoranthene	15	52	25	0.039	<35	<41	0.073	<36	<71	<73
Benzo(a)pyrene	0.1	0.5	8	<35	<35	<41	0.097	<36	0.081	<73
Benzo(g,h,i)perylene	2300	41000	32000	0.05	<35	<41	0.110	<36	0.15	<73
Chrysene	140	450	77	0.056	<35	<41	0.110	<36	0.14	<73
Indeno(1,2,3-cd)pyrene	1.5	5.3	28	<35	<35	<41	<35	<36	0.1	<73
Fluorene	2200	160	28,000	0.2	<35	<41	<35	<36	<71	<73
Phenanthrene	2000	250	30,000	<35	<35	<41	<35	<36	<71	<73
Anthracene	18000	2500	260,000	<35	<35	<41	<35	<36	<71	<73
Fluoranthene	2900	1200	48,000	<35	<35	<41	0.140	<36	0.1	<73
Pyrene	2200	880	37,000	0.17	<35	<41	0.097	<36	0.11	<73
FL-PRO (USEPA Method 8270) (mg/kg)										
TRPH	340	340	2500	48	7.7	<8	32	<7.1	46	100

Notes:
[1]Chapter 62-770, FAC (April 30, 1999)
The quality control for this data has only been checked by the laboratory.
Bold = values in excess of SCTLs, Chapter 62-770, FAC (April 30, 1999)

NA = not analyzed
J = estimated value

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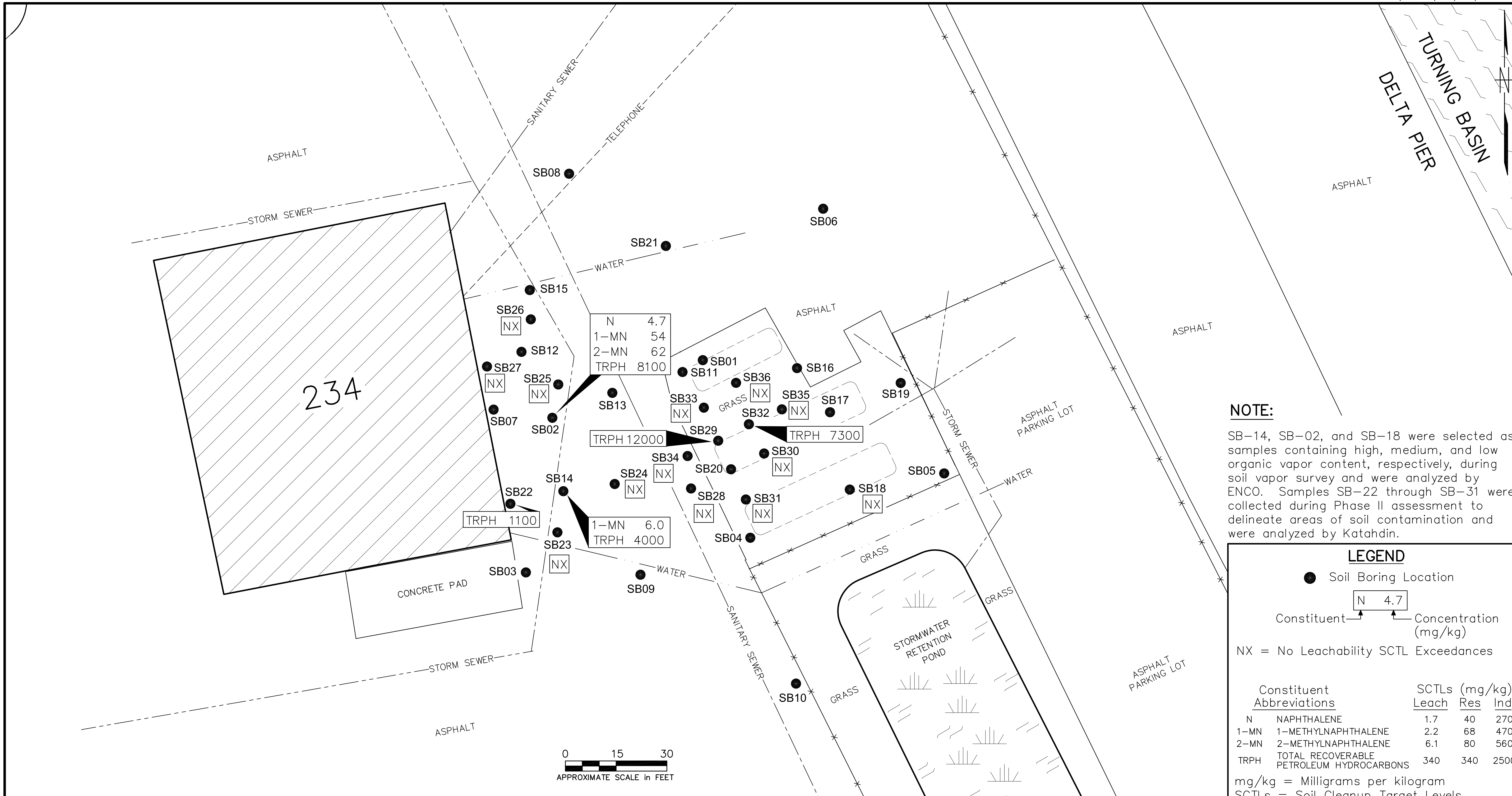

NOTE:

SB-14, SB-02, and SB-18 were selected as samples containing high, medium, and low organic vapor content, respectively, during soil vapor survey and were analyzed by ENCO. Samples SB-22 through SB-31 were collected during Phase II assessment to delineate areas of soil contamination and were analyzed by Katahdin.

LEGEND

● Soil Boring Location

N 4.7 — Constituent / Concentration (mg/kg)

NX = No Leachability SCTL Exceedances

Constituent Abbreviations		SCTLs (mg/kg) Leach	Res	Ind
N	NAPHTHALENE	1.7	40	270
1-MN	1-METHYLNAPHTHALENE	2.2	68	470
2-MN	2-METHYLNAPHTHALENE	6.1	80	560
TRPH	TOTAL RECOVERABLE PETROLEUM HYDROCARBONS	340	340	2500

mg/kg = Milligrams per kilogram
SCTLs = Soil Cleanup Target Levels

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY: LLK DATE: 10/21/03
CHECKED BY / DATE
COST/SCHED-AREA
SCALE: AS NOTED

FIXED-BASE SOIL ANALYTICAL RESULTS
EXCEEDING SCTLs
SITE 250
SITE ASSESSMENT REPORT
NAVAL STATION MAYPORT
MAYPORT, FLORIDA

CONTRACT NO. 5863
APPROVED BY / DATE
APPROVED BY / DATE
DRAWING NO. FIGURE 3-5 REV. 1

FORM CADD NO. SDIV_BH.DWG - REV 0 - 1/20/98

Nine PAHs were identified in SB-14 and seven in SB-02. Aside from the naphthalene compounds and TRPH, no SCTL exceedances were reported. No SCTL exceedances were reported in the low-range sample [SB-18 (1ft)].

3.3.3 Soil Sampling Results Phases II

As discussed in Section 2.6, during Phase II, 10 additional soil samples (SB-22 through SB-31) were collected at the site on November 25, 2003, and submitted to a fixed-base laboratory (Katahdin) for analysis of TRPH and PAHs. One of the five soil samples collected at 3 ft bls from soil boring SB-29 exceeded the leachability/residential (340 mg/kg) and industrial (2,500 mg/kg) SCTLs for TRPH with a concentration of 12,000 mg/kg. Because of this exceedance, five additional soil samples were completed to delineate this sample point.

The delineation of soil boring SB-29 occurred on May 11 and 12, 2004, and involved the collection of soil borings SB-32 through SB-36 which were also analyzed for TRPH and PAHs by ENCO Laboratories. Each of these samples were collected at 1 ft bls and above the capillary region, which was about 2.5 ft to 3 ft bls. Some PAH constituents and TRPH were identified in a number soil samples, but only one sample, SB-32, collected at a depth of 3 ft bls exceeded the leachability/residential and industrial SCTL for TRPH. The TRPH concentration of SB-32 collected at 1 ft bls had a concentration of only 110 mg/kg, which is below the 340 mg/kg residential/leachability SCTL. A summary of the fixed-base soil samples is provided as Table 3-4 and illustrated on Figure 3-5. Constituent concentrations exceeding leachability SCTLs, as reported by fixed-base laboratories during all phases of the investigation, are displayed in Figure 3-5. Copies of Katahdin's and ENCO's analytical reports are included in Appendix J.

3.4 GROUNDWATER ANALYTICAL RESULTS

3.4.1 DPT Grab Samples – Phase I

Compounds identified in groundwater samples analyzed by the mobile laboratory were the same as those identified in soil samples (i.e., naphthalene compounds and TRPH). A summary of detected concentrations is listed in Table 3-5 and illustrated on Figure 3-6. The analytical report submitted by KB Laboratories is included with the mobile laboratory soil analytical results in Appendix I.

Concentrations exceeding GCTLs were reported in 5 of 15 shallow samples analyzed (SB-01, SB-02, SB-04, SB-18, and SB-20). No exceedances were reported in the vertical profile samples collected at SB-11 from depths of 20 ft, 30 ft, and 40 ft bls. However, trace concentrations ranging from 0.54 milligrams per liter (mg/L) (20 ft bls) to 0.68 mg/L (30 ft bls) of TRPH were reported in those samples.

Table 3-5
Mobile Laboratory Groundwater Analytical Results

Site Assessment Report, Site 250
Naval Station Mayport
Mayport, Florida

Compound	FDEP Target Level1 (µg/L)	Sample ID, Sample Date, and Sample Interval								
		SB-01	SB-02	SB-03	SB-04	SB-05	SB-06	SB-07	SB-08	SB-09
		8/11/2003	8/11/2003	8/11/2003	8/11/2003	8/11/2003	8/11/2003	8/12/2003	8/12/2003	8/12/2003
Constituents (USEPA Method 8021B) (µg/L)										
Naphthalene	20	**61.4**	**100**	<5.0	<50	<5.0	<5.0	<5.0	<5.0	<5.0
1-Methylnaphthalene	20	**118**	**600**	14.5	**88**	<5.0	<5.0	<5.0	<5.0	<5.0
2-Methylnaphthalene	20	**105**	**690**	13.3	**82**	<5.0	<5.0	<5.0	<5.0	<5.0
TRPH (mg/L)	5	3.2	**51**	0.78	**11**	0.44	ND	ND	ND	ND

Compound	FDEP Target Level1 (µg/L)	Sample ID, Sample Date, and Sample Interval								
		SB-10	SB-11 20'	SB-11 30'	SB-11 40'	SB-16	SB-17	SB-18	SB-19	SB-20
		8/12/2003	8/12/2003	8/12/2003	8/12/2003	8/14/2003	8/14/2003	8/14/2003	8/14/2003	8/14/2003
Constituents (USEPA Method 8021B) (µg/L)										
Naphthalene	20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1-Methylnaphthalene	20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	**89.5**	<5.0	**47.3**
2-Methylnaphthalene	20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	**36**	<5.0	**22**
TRPH (mg/L)	5	ND	0.54	0.68	0.56	ND	ND	**8.2**	0.58	1.8

Notes:
Bolded values exceed FDEP target levels.
ND = No volatile TRPH peaks detected

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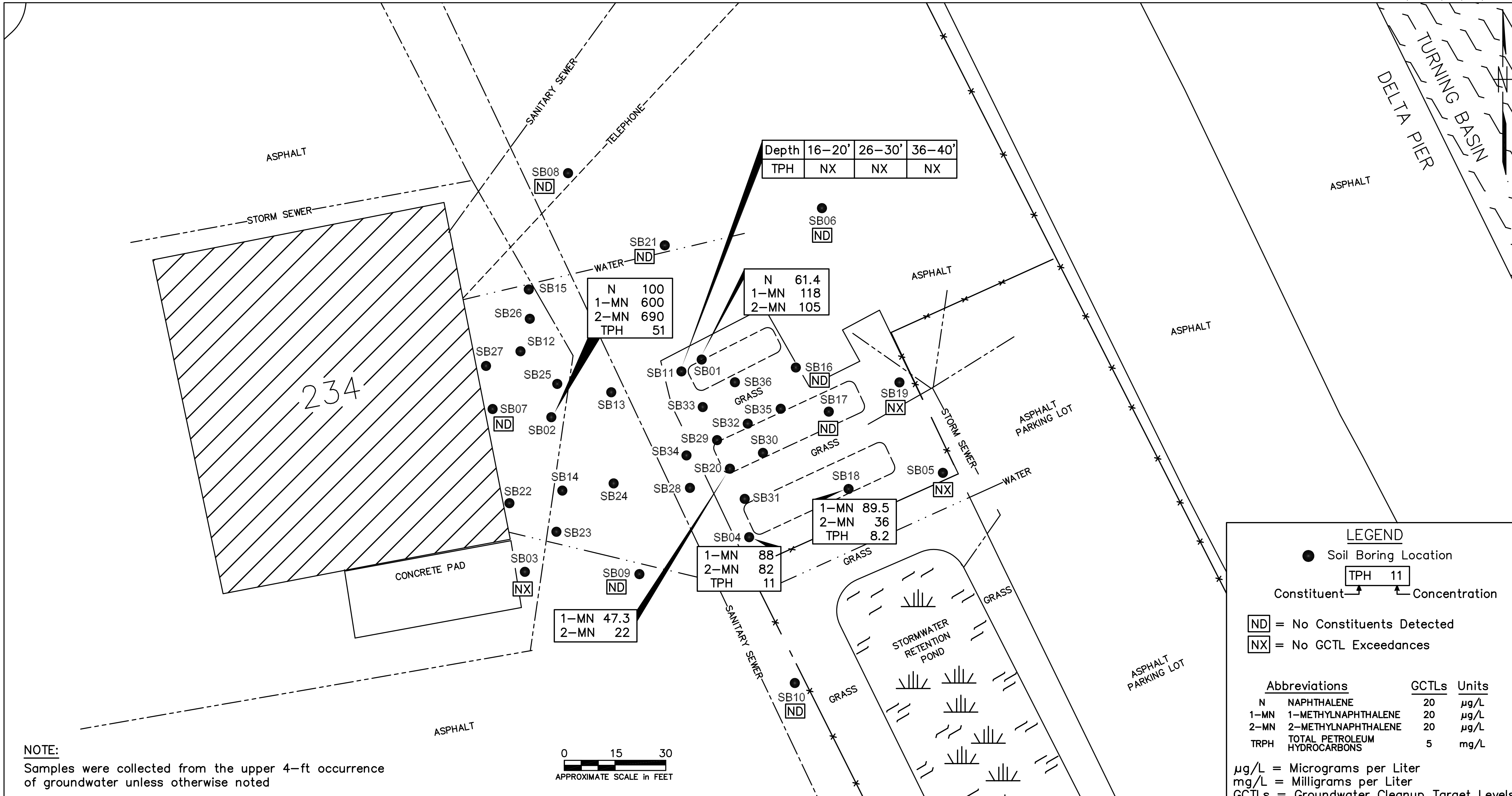


NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY LLK DATE 11/07/03
CHECKED BY DATE
COST/SCHED–AREA
SCALE AS NOTED

MOBILE LABORATORY GROUNDWATER
ANALYTICAL RESULTS EXCEEDING GCTLs
SITE 250
SITE ASSESSMENT REPORT
NAVAL STATION MAYPORT
MAYPORT, FLORIDA

CONTRACT NO. 5863
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 3–6 REV. 1

FORM CADD NO. SDIV_BH.DWG – REV 0 – 1/20/98

The highest PAH and TRPH concentrations in the shallow groundwater zone were identified in the sample collected from SB-02, a location where elevated soil vapor readings and SCTL exceedances in laboratory-analyzed soil samples had previously been reported, as discussed in the preceding sections.

Boring SB-02 is located approximately 50 ft west of the former waste oil UST and approximately 15 east of Building 234 adjacent to a storm sewer, as shown on Figure 3-2. As reported by the mobile laboratory, Concentrations exceeding GCTLs in the sample collected from SB-02 were naphthalene (100 µg/L), 1-methylnaphthalene (600 µg/L), 2-methylnaphthalene (690 µg/L), and TRPH (51 mg/L). The GCTL for the three naphthalene compounds is 20 µg/L and for TRPH is 5 mg/L.

Other locations where one or more analytes were identified at elevated levels exceeding GCTLs in shallow groundwater grab samples were as follows:

- SB-01, near the northwestern corner of the removed waste oil tank: naphthalene (61.4 µg/L), 1-methylnaphthalene (118 µg/L), and 2-methylnaphthalene (105 µg/L).

- SB-04, a few ft west of the southern removed fuel oil AST: 1-methylnaphthalene (88 µg/L), 2-methylnaphthalene (82 µg/L), and TRPH (11 mg/L).

- SB-18, near the southeastern corner of the southern removed fuel oil AST: 1-methylnaphthalene (89.5 µg/L), 2-methylnaphthalene (36 µg/L), and TRPH (8.2 mg/L).

- SB-20, approximately 15 ft southwest of removed waste oil tank near the northwestern corner of the northern removed fuel oil AST: 1-methylnaphthalene (47.3 µg/L), and 2-methylnaphthalene (22.0 µg/L).

3.4.2 Permanent Monitoring Well Samples – First Event

After the Phase I (DPT) investigation was completed, permanent monitoring wells MW-01 and MW-06D were installed at the location containing the highest levels of contamination (SB-02). MW-02 and MW-04 were installed for cross-gradient control to the south. MW-03 was installed as a downgradient well and MW-05 as an upgradient well.

No concentrations exceeding GCTLs were reported in the GAG/KAG analyses of groundwater samples collected from the six wells. The four analytes most frequently detected at the site (three naphthalene compounds and TRPH) were identified in the shallow source area well (MW-01), but at low concentrations only slightly above laboratory detection limits. TRPH was also identified at a low concentration (0.22 mg/L) in MW-02, the southwestern (cross-gradient) control well. Three compounds not previously reported [MTBE; 1,1-dichloroethane (DCA); and cis-1,2-dichloroethene (DCE)] were identified at low concentrations below GCTLs in the vertical profile well, MW-06D. A summary of detected compounds in samples collected from the permanent monitoring wells is presented in Table 3-6 and illustrated in Figure 3-7. Validated laboratory reports are provided in Appendix K.

3.4.3 Permanent Monitoring Well Samples – Second Event

A tag map illustrating the analytical results from of the second round of groundwater sampling performed on November 24, 2003 is included as Figure 3-7. A summary of detected compounds from the second event is provided in Table 3-6. Analytical data reported by Katahdin (Appendix K) during this second event were similar to those reported by ENCO in the first event. No GCTL exceedances were reported, and concentrations of individual constituents were similar in both laboratory reports.

3.5 SOIL CONTAMINATION STATISTICAL ANALYSIS

During the March 2004 NAVSTA Mayport Partnering Team meeting in Jacksonville, Florida, it was proposed that a statistical model analysis be performed to determine if the site as a whole posed unacceptable risks. The underlying reason behind this decision was that a portion of the impacted soils identified are near a storm sewer, which may be a source of the contaminants. The statistical model for calculating a 95 percentile confidence level via FDEP's approved software (FLUCL) for upper confidence level calculations was used.

Data used in the statistical model included both fixed-base laboratory and mobile laboratory results. Since replicate data was available for some of the samples, calculations were made using both average values and the highest value detected for replicate samples. Copies of the model output for each parameter using both average and high replicate values are provided in Appendix L.

The model was run using two scenarios to calculate the risk posed by the site at the 95% confidence level (95% UCL). Scenarios included using all of the data to evaluate the risks posed by the site in its current condition and also after removal of impacted soils in the source area. Each scenario was run using average and high concentration results.

The results of the model for all data (current site conditions) at average values indicates the 95% UCL exceeds the following SCTL values: leachability (1-methylnapthalene, 2-methylnapthalene, and TRPH) and residential exposure (TRPH). Model results for the 95% UCL value using the highest concentrations

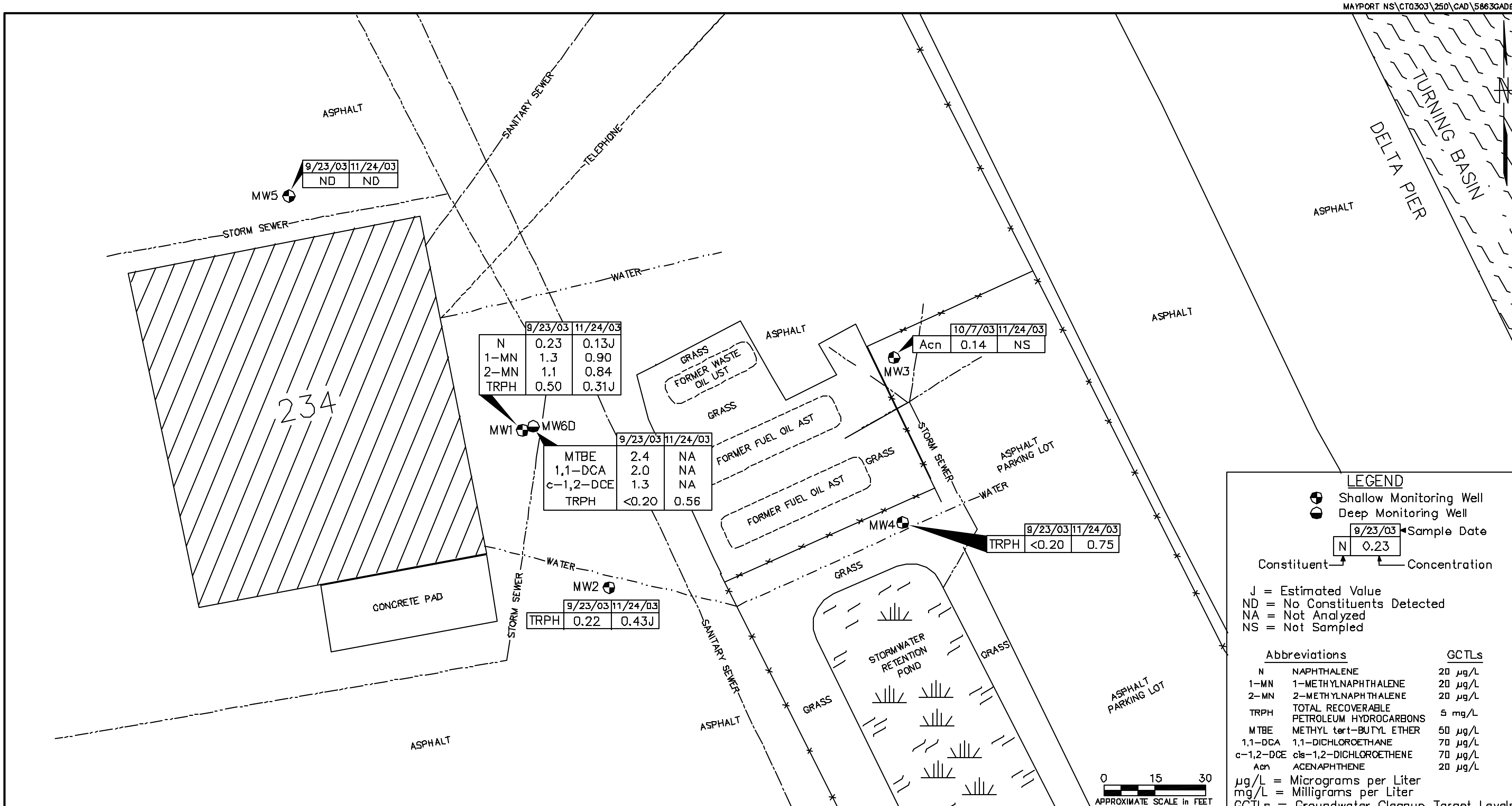
Table 3-6
Fixed-Base Laboratory Groundwater Analytical Results

Site Assessment Report, Site 250
Naval Station Mayport
Mayport, Florida

Compound	FDEP GCTL[1]	Sample ID and Date											
		MW-01		MW-02		MW-03		MW-04		MW-05		MW-06D	
		9/23/03	11/24/03	9/23/03	11/24/03	10/7/03	11/24/03	9/23/03	11/24/03	9/23/03	11/24/03	9/23/03	11/24/03
VOCs (USEPA Method 8260) (µg/L)													
MTBE	50	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	2.4	NA
1,1-DCA	70	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	2	NA
c-1,2-DCE	70	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	1.3	NA
PAHs (USEPA Method 8310) (µg/L)													
Naphthalene	20	0.23	0.13 J	<0.10	<0.20	<0.10	NS	<0.10	<0.20	<0.10	<0.20	<0.10	<0.20
1-Methylnaphthalene	20	1.3	0.9	<0.10	<0.20	<0.10	NS	<0.10	<0.20	<0.10	<0.20	<0.10	<0.20
2-Methylnaphthalene	20	1.1	0.84	<0.10	<0.20	<0.10	NS	<0.10	<0.20	<0.10	<0.20	<0.10	<0.20
Acenaphthene	20	<0.10	<0.20	<0.10	<0.20	0.14	NS	<0.10	<0.20	<0.10	<0.20	<0.10	<0.20
FL-PRO (USEPA Method 8270) (mg/L)													
TRPH	5	0.5	0.31 J	0.22	0.38 J	1.3	NS	<0.20	0.43 J	<0.20	<0.50	<0.50	0.56
Total Lead (Method 200.7 mg/L)													
	15	<0.010	NA	<0.010	NA	<0.010	NA	<0.010	NA	<0.010	NA	<0.010	NA

Notes:
[1]Chapter 62-770, FAC (April 30, 1999)
Wells were installed on August 7, 2001.
NA = not analyzed
J = estimated value
NS = not sampled

MAYPORT NS\CTO303\250\CAD\5863GAD903



NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY LLK DATE 10/31/03
CHECKED BY DATE
COST/SCHED-AREA
SCALE AS NOTED

FIXED-BASE LABORATORY
GROUNDWATER ANALYTICAL RESULTS
SITE 250
SITE ASSESSMENT REPORT
NAVAL STATION MAYPORT
MAYPORT, FLORIDA

CONTRACT NO. 5863
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 3-7 REV. 0

FORM CADD NO. SDIV_BH.DWG - REV 0 - 1/20/98

indicate the 95% UCL exceeds the following SCTL values: leachability (naphthalene, 1-methylnapthalene, 2-methylnapthalene, TRPH), residential (TRPH), and industrial (TRPH). Model results are provided in Table 3-7.

In order to evaluate potential remediation scenarios, alternative models were run on the data set. The alternative models considered the removal of soil contamination found in the source area represented by soil borings SB-20, SB-29, SB-30, and SB-32. Removal of these data points from the data set simulates the risk posed by the site after source removal. The 95% UCL calculations in this scenario were developed using average TRPH concentrations and highest concentrations as previously described. The results of the model indicate that 95% UCL values exceed the following SCTLs using average concentrations; leachability (1-methylnapthalene, 2-methylnapthalene, and TRPH); and residential (TRPH). Model results for the 95% UCL value using the highest concentrations indicate the 95% UCL exceeds the following SCTL values: leachability (naphthalene, 1-methylnapthalene, 2-methylnapthalene, and TRPH) and residential (TRPH). There are no exceedances of industrial SCTLs using this excavation scenario. Model results are provided in Table 3-7.

Additional model runs were conducted in an attempt to determine if excavation could be conducted to reduce site risk to below residential and/or leachability scenarios. It was found that this could only be accomplished via removal of soils adjacent to or beneath the storm sewer line. As a result, the Navy determined that a site closure strategy would be pursued to remove source area soils to reduce risks to levels below industrial land uses and to institute land use controls to prevent future development of the site for residential purposes.

Table 3-7
Statistical Methods Used to Achieve 95% UCL

Site Assessment Report, Site 250
Naval Station Mayport
Mayport, Florida

Chemical of Concern	FDEP SCTLs (mg/kg)			95% UCL Value[1]			
	Residential	Industrial	Leachability	Average Values	Average Values Minus Excavated Source Area[2]	High Values	High Values Minus Excavated Source Area[2]
Naphthalene	40	70	1.7	1.43	1.60	2.15	2.43
1-Methylnaphthalene	68	470	2.2	5.83	6.62	7.68	8.74
2-Methylnaphthalene	80	560	6.1	6.48	7.36	8.74	9.95
TRPH (mg/kg)	340	2500	340	2337	887	2659	1434

Notes:
[1] = The 95 percentile upper confidence level value was calculated using FDEP's FLUCL software.
[2] = The Planned Excavated Area contains soil borings SB-20, SB-29, SB-30, and SB-32.

4.0 DISCUSSION

Analytical data generated during the SA at Site 250 indicates that discharge(s) of regulated substances previously stored at the site (waste oil and fuel oil) have occurred. Reported concentrations of targeted constituents in soil samples and distribution of contaminants in these media are typical of fuel storage operations where overspills or minor releases may have occurred accidentally during filling operations or during tank excavation and removal events, but are not indicative of persistent releases occurring over extended time periods. In the area where the waste oil tank was buried, a tank removal was performed in 1998, soil tests were performed for hazardous waste, and the removal area was backfilled. Soil impacts were present, but none were identified as hazardous waste, and no groundwater impacts were identified.

The other potential on-site sources of contamination (i.e., ASTs containing fuel oil) were fully exposed to observation throughout their service period, and no evidence of extensive discharge of fuel to the surrounding environment was reported or documented. In 2002, two ASTs were removed. Based on the follow up assessment (Phase II), a small release occurred in the area of the former ASTs. Soil analytical results collected at 1ft bls demonstrate elevated TRPH values (below residential SCTLs) and low level PAH constituents (below SCTLs) that would indicate the release occurred at the land surface. Analysis of the 3 ft bls soil sample identified only TRPH as an exceedance.

Groundwater samples were taken from monitoring wells installed in documented soil impacted areas and areas where screening level data indicated potential exceedances of GCTLs. No groundwater exceedances were confirmed. Two rounds of groundwater samples were taken to verify there were no exceedances of GCTLs.

Soil impacts greater than the industrial and leachability SCTLs were identified at two locations, one associated with the storm sewer utilities and one sample location near the former ASTs and UST. The NAVSTA Mayport Partnering Team was consulted, and it was recommended that a statistical model be used to determine the site UCL. To achieve the UCL, it is recommended that the impacted soil near the ASTs and UST should be removed and replaced with clean backfill. This limited excavation will result in a UCL greater than 95% with industrial land use controls (LUCs) being implemented at the site. Once the soil is removed and the SAR approved, groundwater at the site will be monitored for a minimum of one year. An excavation and groundwater monitoring plan are provided in section 5.0.

5.0 SITE ASSESSMENT

A SA was performed at Site 250, NAVSTA Mayport, in which soil samples were field screened with an OVA-FID for organic vapor content, and soil and groundwater samples were analyzed by mobile and fixed-base laboratories for waste oil and fuel oil constituents. The investigation was centered on an area where a 12,500-gallon waste oil UST was formerly located and on an area to the south of the UST where two 10,000-gallon fuel oil ASTs were formerly located. The UST was excavated and removed in 1998, and the two ASTs were removed in 2002. Prior to soil and groundwater assessment activities, the groundwater flow direction in the shallow surficial aquifer underlying the site was inferred to be easterly-northeasterly toward the Mayport turning basin based upon relative water table elevations in four piezometers installed at the outset of the investigation.

Twenty-one soil borings (SB-01 through SB-21) were advanced in and around the area of concern during the preliminary assessment to evaluate soil and groundwater quality, and six permanent monitoring wells were installed during subsequent phases of the investigation.

Soil samples collected from 4 of the 21 borings (SB-02, SB-12, SB-14, and SB-20) produced net organic vapor headspace readings greater than 50 ppm, ranging from 76 to 405 ppm, indicating the presence of "excessively contaminated soil" as defined in Chapter 62-777.200, FAC. Three of the four locations (SB-02, SB-12, and SB-14) were approximately 50 ft west of the former waste oil UST adjacent to a storm sewer, and the fourth (SB-20) was approximately 15 ft southwest of the former UST.

One select soil sample from each boring was analyzed by the mobile laboratory for appropriate constituents. Concentrations exceeding leachability SCTLs were only reported in the SB-02 sample (three naphthalene compounds) and in the SB-14 sample (TRPH). Splits of the two samples (SB-02 and SB-14) were collected for confirmatory analyses by a fixed-base laboratory. Concentrations reported for naphthalene, 1-methylnaphthalene, 2-methylnaphthalene, and TRPH, the four most frequently-occurring compounds reported during the assessment, were comparable to those reported by the mobile laboratory.

The mobile laboratory reported concentrations exceeding GCTLs in 5 of 15 shallow groundwater samples analyzed (SB-01, SB-02, SB-04, SB-18, and SB-20) during Phase I of the assessment. The highest concentrations were identified in the sample collected from SB-02, a location where elevated soil vapor readings and SCTL exceedances in laboratory-analyzed soil samples had previously been reported. Values reported for the four frequently occurring compounds in groundwater samples collected from SB-02 were naphthalene (100 µg/L), 1-methylnaphthalene (600 µg/L), 2-methylnaphthalene (690 µg/L), and TRPH (51 mg/L).

Five shallow monitoring wells (screened 3 to 13 ft bls) and one deep monitoring well (screened 35 to 40 ft bls) were installed at locations considered optimum based upon results of the preliminary assessment. The deep well (MW-06D) and one of the shallow wells (MW-01) were installed as a pair at the location of SB-02. Samples collected from the well pair and from four shallow monitoring wells (one upgradient, one downgradient, and two cross-gradient) were analyzed for GAG/KAG constituents by a fixed-base laboratory. Concentrations reported for samples collected from the permanent wells were significantly lower than those reported on grab samples collected during the preliminary (DPT) assessment phase. No GCTL exceedances were reported. The four frequently-recurring compounds were identified in samples collected from MW-1 (source area), but at trace concentrations. Groundwater samples were collected a second time from five of the six monitoring wells (MW-03 was inaccessible on the day of sampling) to verify initial results. Results were similar to those reported earlier. No constituents were identified at concentrations exceeding GCTLs.

Supplemental assessment was requested by NAVFAC EFD SOUTH to further delineate areas of soil contamination. Consequently, 15 borings (SB-22 through SB-36) were hand-augered to the soil/water interface at locations proximal to previously-identified hotspots. Soil samples collected from the borings were screened in the field for organic vapor content and sent to a fixed-base laboratory for analysis of target constituents. No soil contamination was identified during the expanded organic vapor headspace survey. TRPH was identified in 4 of the 15 laboratory samples at concentrations exceeding the residential/leachability SCTL of 340 mg/kg, and three of the four (SB-29, SB-32, and SB-35) exceeded the industrial SCTL of 2,500 mg/kg. These industrial exceedances were located in an area near the former UST and ASTs.

FLUCL statistical analysis was performed using fixed-base soil analytical data for the purpose of evaluating the risk posed by the site. The results of these calculations indicate that a 95% UCL can be achieved through the removal of soil surrounding and including the elevated TRPH soil (12,000 ppm) identified at SB-20, SB-29, and SB-32. The soil surrounding these sample points has been pre-characterized for excavation purposes to below industrial SCTLs. The proposed excavation shall involve the removal of approximately 69.95 cubic yards of soil. An Excavation and Monitoring Plan is provided in Section 6.0.

6.0 SOURCE REMOVAL PLAN

6.1 INTRODUCTION

During Phases I and II, soil investigations identified and characterized an area of impacted soil at a depth of 1 ft and 3 ft bls near the former ASTs and UST. Two analysis methods [OVA and fixed-base laboratory analysis (PAHs and TRPH)] were used to determine the presence of impacted soil. During Phase I of the original site assessment (August 2003), soil from soil boring SB-20 was screened using an OVA and had a reading of 80 ppm, which exceeds the Chapter 62-770, FAC, action level of 50 ppm. The identification of this OVA exceedance predicated the additional soil sample collection and analysis that was designed to delineate and pre-characterize the exceedances during soil sampling Phase II. The additional sampling occurred in November 2003 and April 2004, respectively.

The end result of the Phase II sampling identified two additional soil samples (SB-32 and SB-33) that exceeded the industrial SCTL for TRPH. A total of three soil samples (SB-20, SB-32, and SB-33) in the area of the former storage tanks require excavation and backfilling. Soil borings surrounding these sample locations were analyzed for TRPH and PAHs and were found to be equal to or below residential SCTLs. As a result, the extent of the proposed excavation has been defined. It was been requested by the NAVSTA Mayport Partnering Team that the area of excavation extend to soils equal to residential SCTL concentrations. Based on this request, the volume of soil to be excavated shall be approximately 100 cubic yards.

The excavation of the impacted soil should extend to the top of the water column, which was 3 ft to 3.5 ft bls during the time of this investigation. Groundwater in nearby wells was approximately 3 ft bls. During the 1999 TtNUS SAR, soil samples were reportedly collected from the vadose zone at depths of 4 ft to 6 ft bls. If the current area of soil is excavated to a depth of 3 ft, it would equal about 70 cubic yards of compacted soil to be excavated. Due to a fluctuating groundwater table, a conservative estimate of 100 cubic yards of soil to be excavated was derived.

Seven soil borings (SB-28, SB-30, SB-31, SB-33, SB-34, SB-35, and SB-36) form the excavation boundary, and coordinates of these seven points are provided at Table 6-1. A map showing the limits of the excavation is provided as Figure 6-1. The excavation boundary coordinates will provide direction to a contractor to locate the soil pre-characterization sample points, forming the excavation boundary. A Soil Excavation Plan for Site 250 has been prepared and is provided below.

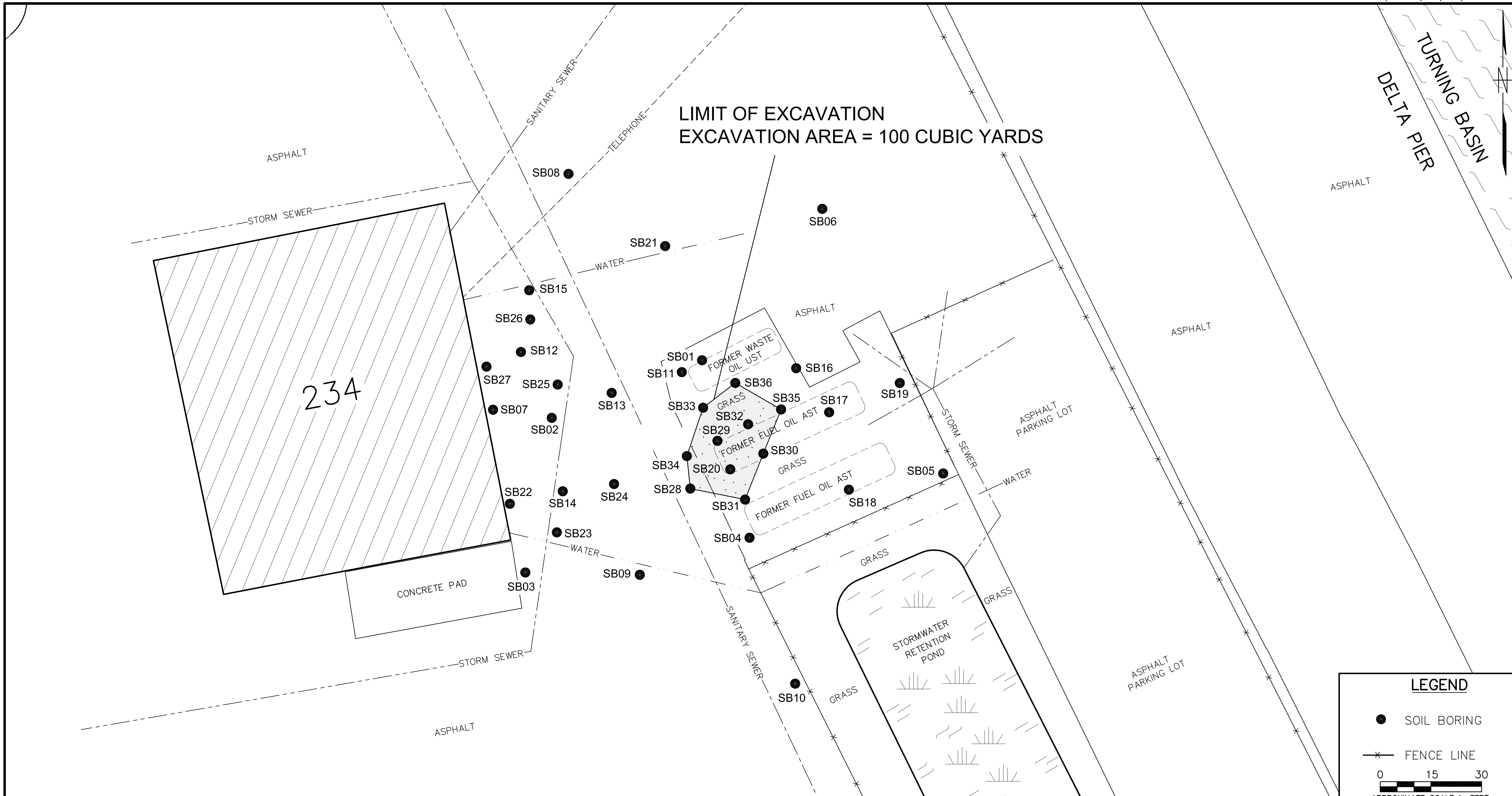
Table 6-1
Excavation Coordinates

Site Assessment Report, Site 250
Naval Station Mayport
Mayport, Florida

Boring Number	Northing	Easting	Latitude	Longitude
SB-20	2201704.1863	526595.1116	30°23'21.09	81°24'39.43
SB-28	2201698.4977	526583.2793	30°23'21.03	81°24'39.56
SB-29	2201712.6236	526591.3183	30°23'21.17	81°24'39.47
SB-30	2201708.8473	526604.8816	30°23'21.13	81°24'39.32
SB-31	2201695.2513	526599.4846	30°23'21.00	81°24'39.38
SB-32	2201717.5116	526600.3863	30°23'21.22	81°24'39.37
SB-33	2201722.4032	526587.0760	30°23'21.27	81°24'39.52
SB-34	2201708.1047	526582.2629	30°23'21.13	81°24'39.58
SB-35	2201721.9004	526610.1494	30°23'21.26	81°24'39.26
SB-36	2201729.7404	526596.5998	30°23'21.34	81°24'39.41

Notes:
The State Plane coordinates shown hereon are based on Florida State Plane, East Zone, 1983/1990 Datum, US Survey Feet, and were established by GPS observations.

MAYPORT NS\CTO303\250\CAD\5863SB-Excava



NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY LLK DATE 10/21/03
CHECKED BY DATE
COST/SCHED-AREA
SCALE AS NOTED

PROPOSED AREA OF EXCAVATION
SITE 250
SITE ASSESSMENT REPORT
NAVAL STATION MAYPORT
MAYPORT, FLORIDA

CONTRACT NO. 5863
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 6-1
REV. 0

FORM CADD NO. SDIV_BH.DWG – REV 0 – 1/20/98

6.2 SOIL EXCAVATION PLAN

The contractor shall be responsible for maintaining the work schedule agreed to by the Navy and all documents required by the FDEP associated with this project. All personnel working on the base are required to abide by rules established by NAVSTA Mayport authorities. More detailed description of the above tasks and responsibilities of the contractor are presented below.

6.2.1 Pre-Excavation Activities

Prior to the excavation the following information, reports, and communications will be completed by the subcontractor:

- The contractor shall oversee all aspects of work-site health and safety throughout the project. A Health and Safety Plan (HASP) documenting all site operations conducted at NAVSTA Station Mayport shall be developed and kept onsite at all times. The HASP must comply with requirements stipulated in the Occupational Safety and Health Administration Standard 29 Code of Federal Regulations 1910.120. The site-specific HASP must be approved by the following NAVFAC EFD SOUTH and the NAVSTA Mayport Environmental Department personnel and submitted no later than 30 days prior to beginning work.

  Ms. Beverly Washington
  Remedial Project Manager
  NAVFAC EFD SOUTH
  PO Box 190010
  North Charleston, SC 29419-9010

  Mr. Scott Dombrosky
  Environmental Department
  Code 320, Navy PWC Jacksonville
  Naval Air Station Jacksonville
  Jacksonville, FL

- An active garage maintained by PWC is located on site. It is the contractor's responsibility to notify PWC (phone number 904-542-3558, extension 4322) two weeks in advance of the beginning of the excavation work. It is common practice that PWC stores material or equipment near the area of the excavation. It is also the contractor's responsibility to communicate with PWC to move all stored materials to a safe distance from the excavation site. The PWC contact name(s) and time(s) of the conversation should be documented by the subcontractor. If PWC is not notified, the work to be performed by the subcontractor may be slowed or stopped do to operations ongoing at the garage.

- Survey coordinates have been provided as Table 6-1. The contractor shall conduct a site survey to identify and flag the surveyed coordinates that designate the limits of the excavation.

- Prior to beginning the excavation, a Dig Permit shall be obtained from the Public Works Engineering Division located at Building 1966 (on base). This permit process should be initiated no later than three weeks prior to beginning work. The dig permit requires the signatures of multiple personnel and multiple parties. Once the permit is obtained, it is required to remain onsite throughout the project. If utilities are found to be inside the excavation, hand digging will be used to remove soils within 3 ft of the located utility. No active utilities are anticipated to be within the excavation area.

- The contractor shall provide written documentation detailing which waste disposal facility and any subcontractors to be used. The soil shall be taken to a licensed disposal facility.

6.3 EXCAVATION AND GROUNDWATER MONITORING ACTIVITIES

All excavation procedures including site control, posting of signs, and cones shall be adhered to and carried out according to the HASP. The extent of the excavation has been defined using surveyed coordinates. A copy of the coordinates documenting the sample boring locations is presented as Table 6-1.

- The contractor shall be responsible for maintaining the schedule and documentation of all activities including the excavation. A daily log should include, but is not limited to, work performed, subcontractors, personnel, equipment, site conditions, and all health and safety related matters. Copies of the daily activities log shall be provided to the Navy upon completion of the project.

- The excavation of the impacted soil shall extend to the top of the surficial water table. If the top of the surficial water table is less than 3 ft bls at the time of the excavation, the soil shall be removed to a minimum of 3 ft bls. At a depth of 3 ft bls, 70 cubic yards of compacted soil would be removed. It is estimated that up to 100 cubic yards of soil may be removed.

- The excavated soils may be stockpiled and covered with heavy-duty polyethylene sheeting at the site. This shall be done in a manner to avoid the potential for contaminating surrounding soil and surface water. Alternately, soil may be stockpiled in properly lined and covered roll-off containers or drums or directly loaded onto trucks for transportation to the approved disposal facility.

- After excavation activities are complete, the groundwater monitoring wells [(MPT-250-) MW-2, MW-3, and MW-4] shall be sampled on a quarterly basis for one year. These wells are located cross and downgradient of the impacted soil. The wells should be sampled and tested for the GAG/KAG analytical group as outlined in Chapter 62-770, FAC. The first event should be conducted immediately after construction/backfilling. This event shall be considered the first of four quarterly sampling events. The subsequent events shall be conducted once per quarter until four events are completed (see Section 5.3.4).

- No post-excavation soil sampling will be required. The extent of the excavation has been pre-determined.

6.3.1 Backfill/Site Restoration

The site shall be backfilled with comparable material that was removed. The backfill shall be void of vegetation and manmade materials. If such materials are found to be in the backfill, the undesirable backfill shall be removed and replaced at the subcontractor's expense. All fill material used shall be obtained from an uncontaminated source. The materials will be certified as clean or tested by the excavation contractor to ensure the material is suitable for use as backfill prior to being brought to the site. The soil shall be tamped or tracked in with equipment to assist with compaction. Lime rock used to cover the site will be restored. A minimum of 6 inches of lime rock is required to cover the excavation area. Compaction of the lime rock should be completed with a sheep's foot or similar device.

6.3.2 Disposal

The soils shall be properly disposed of based on waste characterization activities. A disposal analysis has been collected for TRPH using the FL-PRO Method, PAHs using USEPA Method 8270, VOCs using USEPA Method 8260, and metals (arsenic, cadmium, chromium and lead) using USEPA Method 6010. Laboratory analysis of soil samples for disposal purposes has been conducted and can be provided upon request. The soil is classified as non-hazardous. The impacted soil shall not remain on site longer than two days after its excavation and will be manifested for disposal at a licensed facility.

6.3.3 Documentation

Once the excavation is complete, the subcontractor shall prepare a Source Removal Report documenting all remedial action activities. The report shall contain all elements required by the FDEP to obtain site closure including date, time, description of work completed, photographs, figures, tables, groundwater analytical results, soil disposal manifests, and clean fill certification. The report shall also indicate the LUCs to be implemented at the site. The report shall be submitted to Ms. Beverly Washington, Remedial Project Manager, NAVFAC EFD SOUTH, and Mr. Scott Dombrosky, PWC Environmental Director, in draft form for approval.

6.3.4 Monitoring

Once the excavation is completed and the FDEP has approved the excavation report, the monitoring phase of work can begin. The monitoring plan included in the report shall be limited to four quarters. The wells included as part of the plan shall be MW-1, MW-3, and MW-4. The positions of the wells in relation to the soil impact are source area and downgradient, and each well sample should be analyzed for the

GAG/KAG analytical group as outlined in Chapter 62-770, FAC. Upon the completion of each report, the report will be submitted to the Navy and PWC in draft form. Following Navy approval, a letter will be issued to FDEP. If no constituents are detected after two successive monitoring events, the contractor shall recommend no further action and obtain FDEP concurrence prior to the next monitoring event. If constituents are detected but remain below GCTL values, the contractor shall recommend no further action after four quarters of monitoring.

7.0 RECOMMENDATIONS

Based on findings of this site assessment, it is requested that source area soils be excavated, a soil excavation report be completed, and quarterly monitoring be completed as stated within this document. Since impacted soil adjacent to the storm sewer shall be left in place, this area should be included in NAVSTA Mayport's LUC Plan.

REFERENCES

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REFERENCES (Continued)

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APPENDIX A

SAR SUMMARY SHEET

CONTAMINATION ASSESSMENT REPORT SUMMARY SHEET

Facility Name: Site 250, Naval Station Mayport — Reimbursement Site: ☐

Location: Mayport, Florida — State Contract Site: ☐

EDI #: ______ FAC I.D.# ______ Other: Non-Prog. ☑

Date Reviewed: ______ Local Government: ______

(1) Source of Spill: Waste Oil UST — Date of Spill: Unknown

(2) Type of Product:

Gasoline Group	Gallons Lost	Kerosene Group	Gallons Lost
☐ Leaded		☐ Kerosene	
☐ Unleaded Regular		☐ Diesel	
☐ Unleaded Premium		☐ JP-4 Jet Fuel	
☐ Gasohol		☐ Heating Fuel	
☐ Undetermined		☑ Waste Oil	unknown

(3) Description of IRA: Soil from tank excavation removed.

☐ Free product Removal: ______ (gals)
☑ Soil Removal: 25 yd^3 (cubic yds)
☐ Soil Incineration: ______ (cubic yds)

(4) Free Product still present (yes/no) No — Maximum apparent product thickness: N/A (feet)

(5) Maximum Groundwater contamination levels (ppb):

Total VOA: 2.4 — benzene: <1 — EDB: < 0.020
lead: <10 — MTBE: 2.4 — other: TRPH & PAHs

(6) Brief lithologic description: Medium to fine grained sand w/ abundant shell in places and some disseminated clay.

(7) Areal and vertical extent of soils contamination defined (yes/no) Yes

Highest current soil concentration (OVA): 405 ppm or (EPA method 5030/8020: ______ ppb)

(8) Lower aquifer contaminated? (yes/no) No — Depth of vertical contamination: N/A

(9) Date of last complete round of groundwater sampling: 11/24/03 — Date of last soil sampling: 11/25/03

(10) QAPP approved? (yes/no) Date: 8/24/98

(11) Direction (e.g. NNW) of surficial groundwater flow: ENE (Fig. 3-1,3-2 on page ______)

(12) Average depth to groundwater: 3.75 (ft)

(13) Observed range of seasonal groundwater fluctuations: @ 1 (ft) (Based on water level data at nearby sites)

(14) Estimated rate of groundwater flow: 0.0304 (ft/day)

(15) Hydraulic gradient across site: 0.0021 (ft/ft)

(16) Aquifer characteristics:

	Values	Units	Method
Hydraulic conductivity	4.34	ft/day	Kasenow & Pare, 1995
Storage coefficient	-	ft/ft	-
Aquifer thickness	40	ft	Literature
Effective soil porosity	30	%	Literature
Transmissivity	10	gal/day/ft	Specific Capacity Tests

(17) Other remarks: None

APPENDIX B

TANK CLOSURE REPORT (EEG, 1998)

TANK CLOSURE REPORT FOR THE WASTE OIL TANK AT BUILDING 250 MAYPORT NAVAL STATION

Prrepared for:

NAVFAC COMBINED ACQUISITION OFFICE
MAYPORT ZONE
P.O. BOX 280157
NAVAL STATION MAYPORT FL. 32228-0157
CONTRACT ORDER: N68931-98-M-5093
DELIVERY ORDER: SBA# 0491-98-80193

Prepared by:

Ellis Environmental Group, LC
106 SW 140 Terrace
Newberry Florida 32667
352-332-3888

NAVFAC COMBINED ACQUISITION OFFICE
MAYPORT ZONE
P.O. BOX 280157
NAVAL STATION MAYPORT FL. 32228-0157
ATTN: BOBBY CHESTNUT
CONTRACT ORDER: N68931-98-M-5093
DELIVERY ORDER: SBA# 0491-98-80193

RE: REMOVAL OF WASTE OIL STORAGE TANK AT BUILDING 250 UNDER CONTRACT # N68931-98-M-5093

INTRODUCTION

On May 30, 1998 Ellis Environmental Group, LC. (EEG) was awarded a contract to remove a 10,000 gallon waste oil storage tank in the vicinity of building 250 of the Mayport Naval Air Station . After completing contract Submittals and attending a pre construction meeting on June 4, 1998, EEG mobilized to the site to complete the tank removal task on July 6, 1998.

SITE HISTORY

The Mayport Naval Station is located near the mouth of the St. Johns River and is accessible from Atlantic boulevard and Mayport road. The installation consists of Post-World War II Facilities as well as training , ship support, and docking areas. The installation is located on a very flat, sandy terrain with little or no slope. The St Johns river forms the northern border of the Naval station. . The installation is completely serviced with waste and storm water collection and control systems that prevent super charge or migratory discharge into the inland waterway. . (see Figure 1 for site location)

The 10,000 gallon tank was installed at building 250 in June of 1980 as a storage system of waste oils prior to burning those oils in a boiler that provided steam and hot water for the Naval facility (Figure 1 Project Location). This use of the underground Storage Tank (UST) as a storage system for heating oils precludes any regulatory concerns and renders this tank a "non regulated" item for the purposes of reporting and removal under FAC 62-770. In May of 1998 Florida Department of Environmental Protection's (FDEP) designate, The Jacksonville Department of Environmental Protection (JDEP) was sent a notification of tank removal. Direct conversations with the JDEP indicated that they were aware the tank was not regulated an agreed that no representative from their office would be on the Mayport site during any of the removal phase. Further, no reports or documents are required to be sent to them concerning the removal and closure of this tank system.

TANK REMOVAL

On June 4, 1998, samples of the soils and samples of the sludge in the tank were taken in accordance with the EEG Comprehensive Quality Assurance Plan (COMQAP) approved by the Florida Department of Environmental Protection (FDEP) #940141.The soils in the pump pit were also sampled for analysis . The pump pit samples were composed of lime rock aggregate and extended from 3.5 feet Below Grade (BG) to approximately 5 feet BG. They were visibly stained with product and were, therefore, sampled. The samples were taken at that time to identify the Hazardous - non-Hazardous constituents of the various media and to prepared for removal and proper disposal of the soils and the tank contents. The results of these analysis are presented in Attachment A. The analysis of the sludge in the tank showed the lead concentration to be 0.07 mg/L. This is well below the regulatory limits and can be considered non hazardous waste materials. The soil analysis indicated a TRPH of over 28000 mg/kg and PAHs which is indicative of heavy petroleum type of waste. The total lead and Chromium were below regulatory levels and, therefore, this soil can also be disposed of as non hazardous waste. The analytical results were received on June 18, 1998. This allowed EEG to plan the transportation and disposal of the waste well in advance of the actual removal date. .

On July 6, 1998 EEG and its subcontractors mobilized to the Mayport site to remove the 10,000 gallon waste oil tank. Figure 2 illustrates the location of the tank in relation to building 250 on the Mayport Naval Station site. Figure 3 is a photograph of the site taken by the project manager prior to beginning the tank removal project. A Safety meeting was held with all the closure participants to discuss the work schedule and the potential hazards. The tank removal project began approximately 8:35 A.M. .

The utilities were identified and tagged out of service. Volt Ohm Meter (VOM) readings were taken to be certain that all electrical supply to the lines was indeed discontinued. Wire was pulled and the conduit was cut and capped. Fuel lines , meters, vent lines were disconnected and vacuumed to remove any product. Pumps , filters and lines were disconnected in the pump pit and the pit itself was readied for removal. The tank manways were removed and the product and sludge that remained in the tank was removed. The tank was washed and the water was removed for disposal. A certified marine inspector tested and declared the tank gas free. Approximately 2000 gallons of sludge and waste water were removed using a vacuum truck suction system. This waste stream was shipped to Industrial Waste Services of Jacksonville, Florida for disposal under a non hazardous materials manifest. The Generator copy of the manifest was given to a public works representative. .

The pump pit concrete was removed and decontaminated on a plastic lay-down water retention area. Once decontaminated the concrete was crushed and placed on the truck for disposal. The wash water was vacuumed up and disposed of .The Man ways and other concrete removed were handled in a similar manner. Figure 4 illustrates the excavation and manway removal.

Having removed all the appruences, excavation began on and around the tank. The tank straps were exposed and cut. Initial information indicated that the ground water was at 3.5 feet BG. However, no groundwater was encountered down to and including the level at the bottom of the tank (approximately 11 feet). At this time the tank was uncovered and lifted. The tank proved to be 28.5 feet long and 8.1 feet in diameter. This dimension verifies that the tank is not a 10,000 gallon tank but rather a 12,500 gallon tank. The tank was removed and placed directly on the transport vehicle. Holes were cut in the tank as required for transportation. The tank was transported of site and delivered to an acceptable disposal facility. The disposal certification is provided in Attachment B.

Excavation of soils under the pump pit indicated the presence of a petroleum vapor smell. This was as expected. The presence of contaminated soils was observed from a point directly under the pit and running along the tank outer wall for about 8 feet and down to a depth of 11 feet. These soils were removed and placed in a roll-off container for disposal at an approved soil treatment facility. The amount of soils removed was approximately 25 yards or 35 tons.

Once the tank and contaminated soils were removed, the excavation was back filled with 32 tons of stone and 100 tons of fill. The fill was graded and sodded as per the contract arrangements.

Summary and Conclusions

The removal of the waste oil tank was uneventful. The tank however, was not a 10,000 tank but was a 12,500 gallon tank. All soils, sludges and wash waters were disposed of under non-hazardous manifest as a petroleum related product at approved or licensed facilities.
The tank pit was back filled with clean fill and stone, and sod was placed over the area. This tank closure was considered a clean closure and should require no further action.

FIGURES

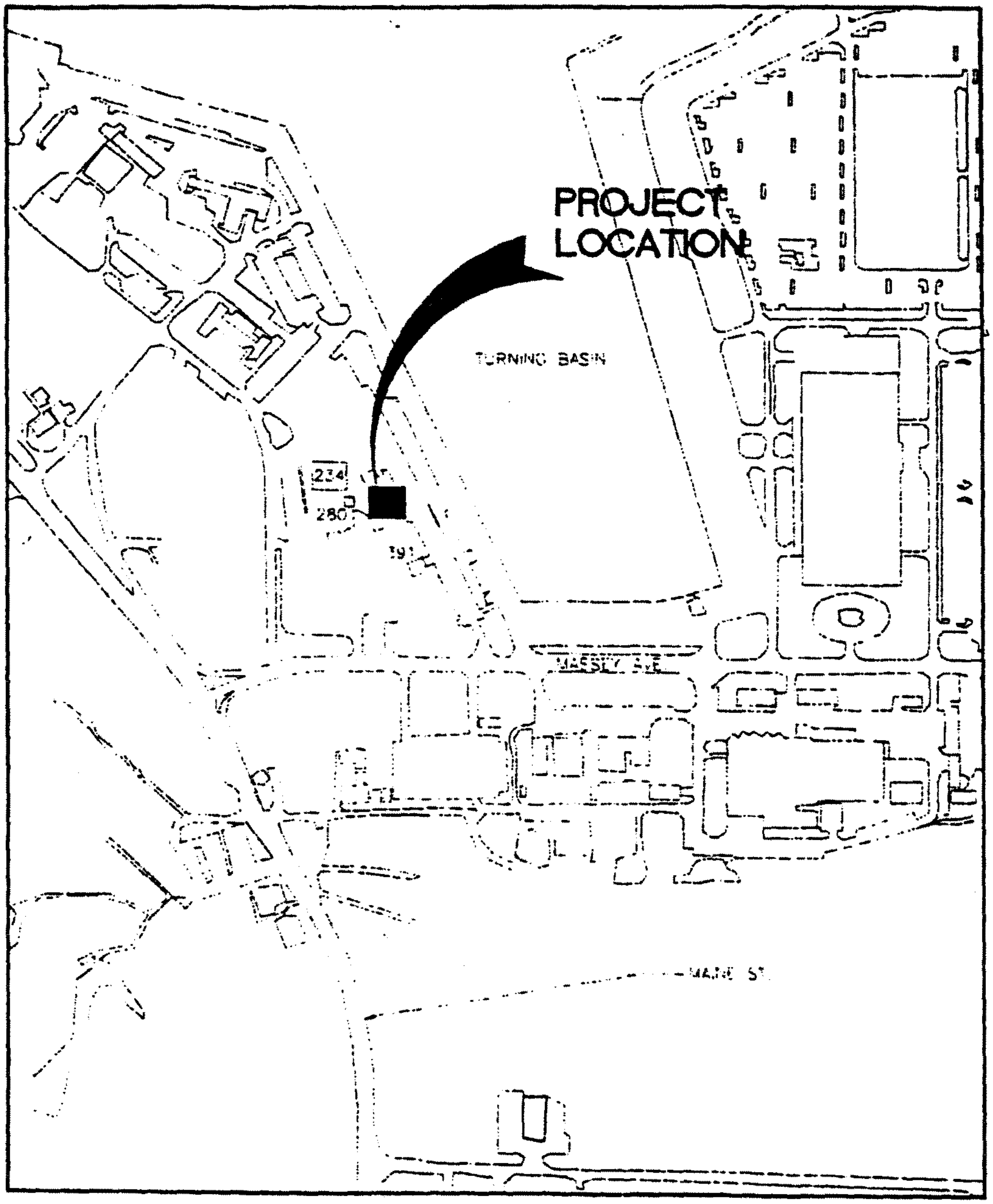

Figure 1

Project Location
N68931-98-M-5093

Ellis
Environmental
Group, LC

WASTE OIL STORAGE TANK REMOVAL
July 6, 1998

Mayport Naval Station
Mayport, Florida

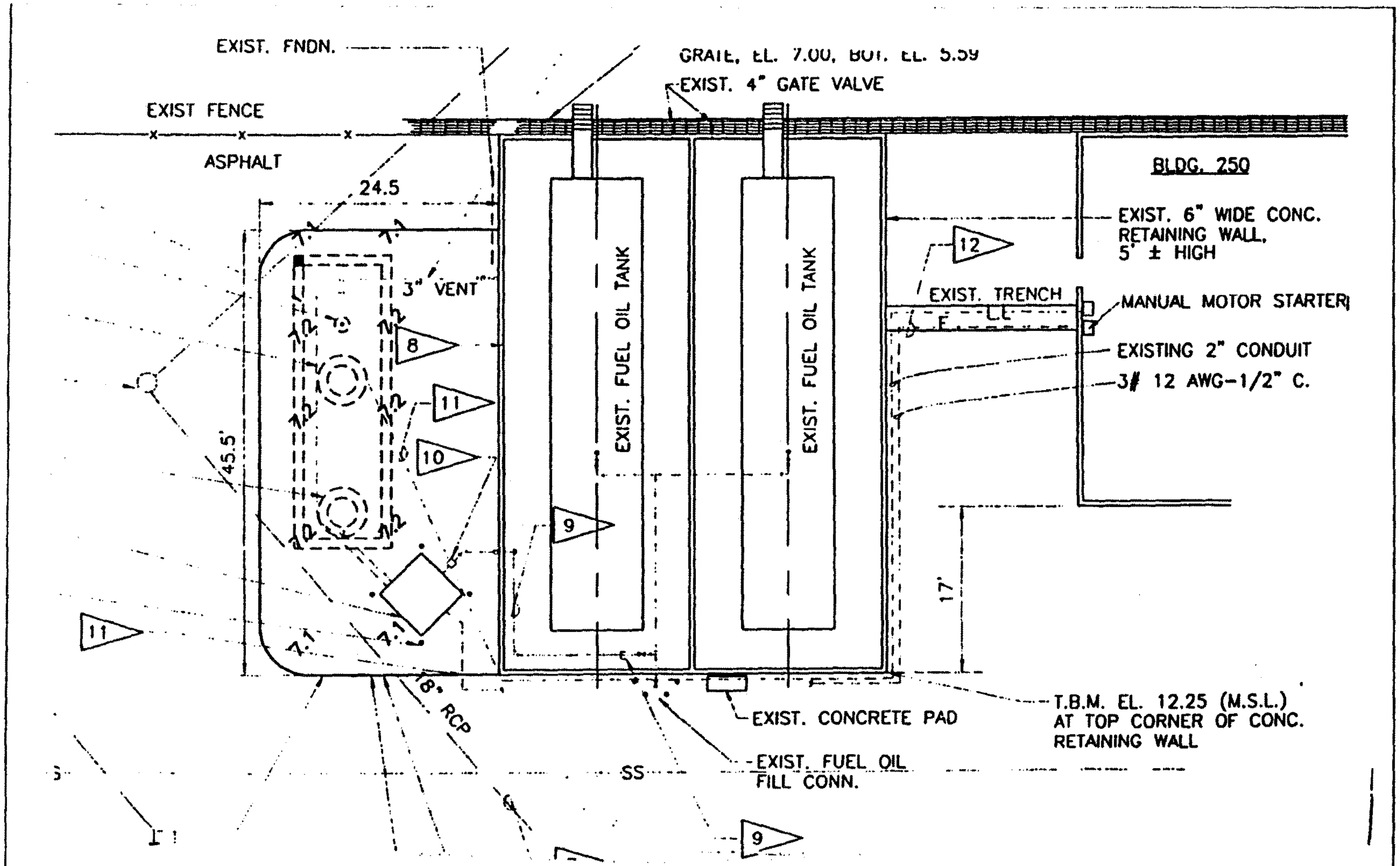

Figure 2

Waste Oil Tank Location
N68931-98-M-5093

Ellis Environmental Group, LC

Waste Oil Storage Tank Removal
July 6, 1998

Mayport Naval Station
Mayport, Florida

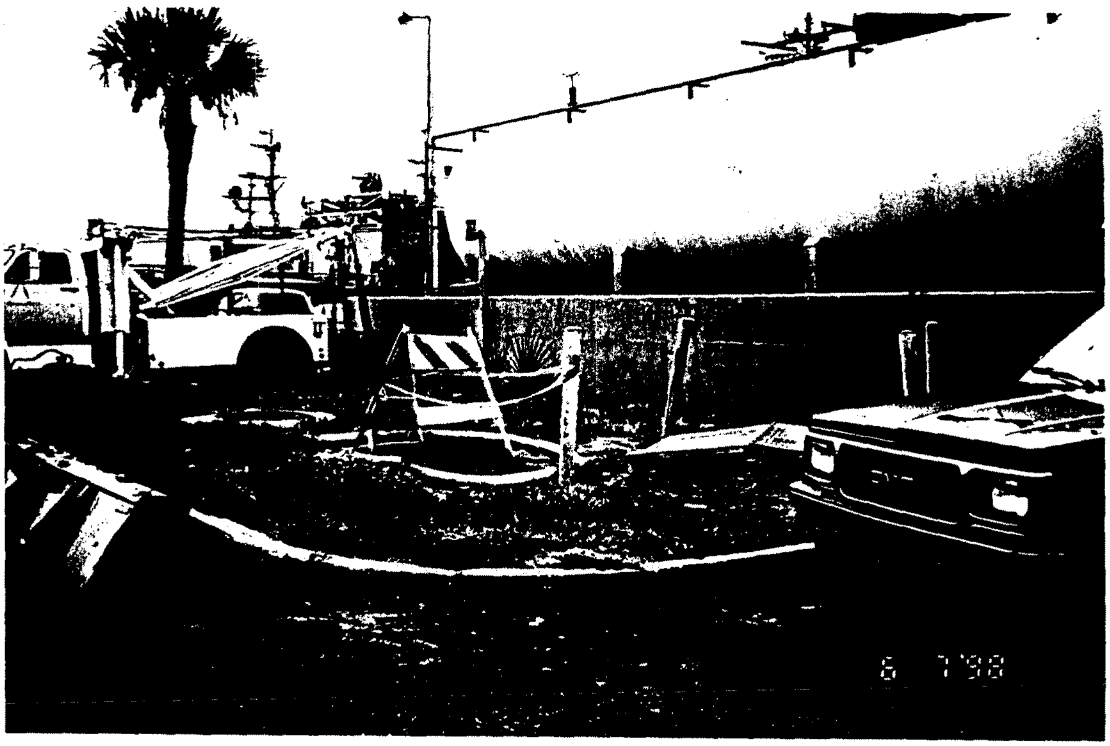

Figure 3

Photograph of Site
During Tank Removal
N68931-98-M-5093

Ellis
Environmental
Group, LC

WASTE OIL STORAGE TANK REMOVAL
July 6, 1998

Mayport Naval Station
Mayport, Florida

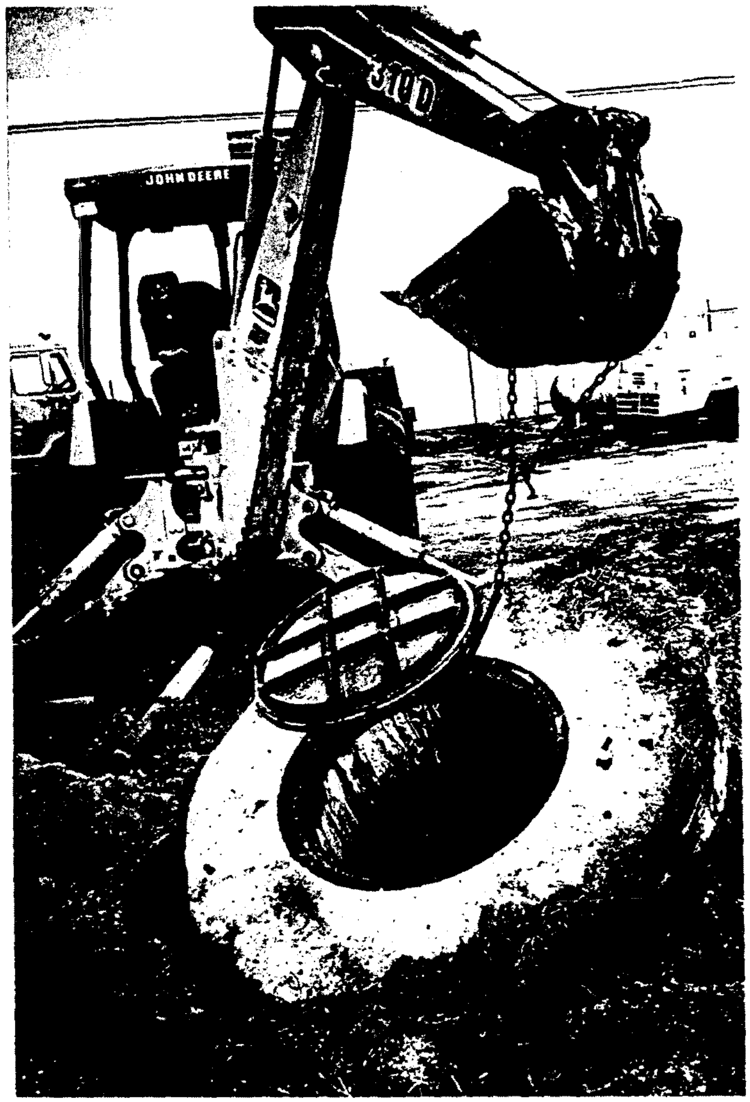

Figure 4

Photograph of Site During Man Way Removal

Ellis Environmental Group, LC

WASTE OIL STORAGE TANK REMOVAL
July 6, 1998

Mayport Naval Station
Mayport, Florida

ATTACHMENT

A

Environmental Conservation Laboratories
4810 Executive Park Court, Suite 211
Jacksonville, Florida 32216-6069
904 / 296-3007
Fax 904 / 296-6210
www.encolabs.com

ENCO Laboratories

DHRS Certification No. E82277

CLIENT : Marine Industrial Service
ADDRESS: 2308 Larsen Road
Jacksonville, FL 32207

REPORT # : JR2237A
DATE SUBMITTED: July 10, 1998
DATE REPORTED : July 24, 1998

PAGE 1 OF 2

ATTENTION: Mr. Tom Phillips

SAMPLE IDENTIFICATION

Samples submitted and
identified by client as:

07/10/98

#1 - NAS MAYPORT UST @ 08:00

PROJECT MANAGER

Scott D. Martin

ENCO LABORATORIES
REPORT # : JR2237A
DATE REPORTED: July 24, 1998

RESULTS OF ANALYSIS

TCLP METALS	METHOD	NAS MAYPORT UST	LAB BLANK	Units
TCLP Lead	1311/6010	1.0 U	0.20 U	mg/L
Date Analyzed		07/21/98	07/21/98	

QUALITY CONTROL DATA

Parameter	% RECOVERY MS/MSD/LCS	ACCEPT LIMITS	% RPD MS/MSD	ACCEPT LIMITS
TCLP Metals				
TCLP Lead, 1311/6010	98/ 99/104	68-126	1	17

Environmental Conservation Laboratories Comprehensive QA Plan #960038

< = Less Than
MS = Matrix Spike
MSD = Matrix Spike Duplicate
LCS = Laboratory Control Standard
RPD = Relative Percent Difference

Environmental Conservation Laboratories
4810 Executive Park Court, Suite 211
Jacksonville, Florida 32216-6069
904 / 296-3007
Fax 904 / 296-6210
www.encolabs.com

ENCO Laboratories

DHRS Certification No. E82277

CLIENT : Marine Industrail Service
ADDRESS: 2308 Larsen Road
Jacksonville, FL 32207

REPORT # : JR2237
DATE SUBMITTED: July 10, 1998
DATE REPORTED : July 15, 1998

ATTENTION: Mr. Tom Phillips

SAMPLE IDENTIFICATION

Samples submitted and
identified by client as:

07/10/98

#1 - NAS MAYPORT UST @ 08:00

PROJECT MANAGER Scott D. Martin

ENCO LABORATORIES
REPORT # : JR2237
DATE REPORTED: July 15, 1998

RESULTS OF ANALYSIS

EPA METHOD 8100 - POLY AROMATIC HYDROCARBONS	NAS MAYPORT UST			LAB BLANK		Units
Naphthalene	12000		D1	330	U	µg/Kg
2-Methylnaphthalene	26000		D1	330	U	µg/Kg
1-Methylnaphthalene	19000		D1	330	U	µg/Kg
Acenaphthylene	3500	U	D1	330	U	µg/Kg
Acenaphthene	3500	U	D1	330	U	µg/Kg
Fluorene	3500	U	D1	330	U	µg/Kg
Phenanthrene	3500	U	D1	330	U	µg/Kg
Anthracene	3500	U	D1	330	U	µg/Kg
Fluoranthene	3500	U	D1	330	U	µg/Kg
Pyrene	3500	U	D1	330	U	µg/Kg
Chrysene	3500	U	D1	330	U	µg/Kg
Benzo(a)anthracene	3500	U	D1	330	U	µg/Kg
Benzo(b)fluoranthene	3500	U	D1	330	U	µg/Kg
Benzo(k)fluoranthene	3500	U	D1	330	U	µg/Kg
Benzo(a)pyrene	3500	U	D1	330	U	µg/Kg
Indeno(1,2,3-cd)pyrene	3500	U	D1	330	U	µg/Kg
Dibenzo(a,h)anthracene	3500	U	D1	330	U	µg/Kg
Benzo(g,h,i)perylene	3500	U	D1	330	U	µg/Kg

Surrogate:	% RECOV	% RECOV	LIMITS
2-Fluorobiphenyl	*	24	14-146
Date Extracted	07/13/98	07/13/98	
Date Analyzed	07/15/98	07/15/98	

MISCELLANEOUS	METHOD	NAS MAYPORT UST	LAB BLANK	Units
Percent Solids	SM2540G	93	NR	%
Date Analyzed		07/10/98		

* = Surrogate recovery unavailable due to matrix interference.
U = Compound was analyzed for but not detected to the level shown.
NR = Analysis not requested for this sample.
DW = Analysis is reported on a "dry weight" basis.
D1 = Analyte value determined from a 1:10 dilution.

ENCO LABORATORIES
REPORT # : JR2237
DATE REPORTED: July 15, 1998

QUALITY CONTROL DATA

Parameter	% RECOVERY MS/MSD/LCS	ACCEPT LIMITS	% RPD MS/MSD	ACCEPT LIMITS
EPA Method 8100				
2-Methylnaphthalene	59/ 46/ 38	28-133	25	21
1-Methylnaphthalene	60/ 48/ 45	23-143	22	21
Acenaphthylene	57/ 46/ 38	15-153	21	16
Fluorene	54/ 45/ 35	11-163	18	13
Pyrene	58/ 50/ 41	15-175	15	15

Environmental Conservation Laboratories Comprehensive QA Plan #960038

< = Less Than
MS = Matrix Spike
MSD = Matrix Spike Duplicate
LCS = Laboratory Control Standard
RPD = Relative Percent Difference

 Results for these procedures apply only to the samples as submitted.

ABC Research Corp.
3437 s.w. 24th avenue • gainesville, florida 32607 • 352-372-0436 • fax 352-378-6483 • visit us @ www.abcr.com
A Better Company For Your Professional Analytical Needs

Report No. 23736 Date JUN 16 1998
Subject: MAY PORT NAVAL WASTE TANK
Received: JUN 04 1998 DOH/DEP # 82135/E82031

ELLIS ENVIRONMENTAL GROUP, L.L.C.
611 N.W. 60TH ST.,STE. B
GAINESVILLE, FL 32607

RESULTS OF ANALYSIS	ANALYSIS METHOD	D. LMT	ANALYST	ANALYSIS DATE/TIME
Sample 1 MAY PORT NAVAL WASTE TANK SOIL 06/04/98				
PURGEABLE AROMATICS LIST - SOIL				
EPA 602		DONE	KH	06/12/98 08:00AM
BENZENE	EPA 624 S	<2.5 UG/KG DRY WT	KH	06/12/98 08:00AM
MONOCHLOROBENZENE	EPA 624 S	<2.5 UG/KG DRY WT	KH	06/12/98 08:00AM
O-DICHLOROBENZENE	EPA 624 S	<2.5 UG/KG DRY WT	KH	06/12/98 08:00AM
M-DICHLOROBENZENE	EPA 624 S	<2.5 UG/KG DRY WT	KH	06/12/98 08:00AM
P-DICHLOROBENZENE	EPA 624 S	<2.5 UG/KG DRY WT	KH	06/12/98 08:00AM
ETHYLBENZENE	EPA 624 S	<2.5 UG/KG DRY WT	KH	06/12/98 08:00AM
TOLUENE	EPA 624 S	110 UG/KG DRY WT	KH	06/12/98 08:00AM
PURGEABLE HALOCARBONS LIST - SOILS				
BROMODICHLOROMETHANE	EPA 624 S	<2.5 UG/KG DRY WT	KH	06/12/98 08:00AM
BROMOFORM	EPA 624 S	<2.5 UG/KG DRY WT	KH	06/12/98 08:00AM
BROMOMETHANE	EPA 624 S	<2.5 UG/KG DRY WT	KH	06/12/98 08:00AM
CARBON TETRACHLORIDE	EPA 624 S	<2.5 UG/KG DRY WT	KH	06/12/98 08:00AM
CHLOROETHANE	EPA 624 S	<2.5 UG/KG DRY WT	KH	06/12/98 08:00AM
2-CHLOROETHYLVINYL ETHER	EPA 624 S	<7.5 UG/KG DRY WT	KH	06/12/98 08:00AM

Report Continues

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611 N.W. 60TH ST.,STE. B
GAINESVILLE, FL 32607

RESULTS OF ANALYSIS	ANALYSIS METHOD	D. LMT	ANALYST	ANALYSIS DATE/TIME
Sample No. 1 (Continued)				
CHLOROFORM	EPA 624 S	<2.5 UG/KG DRY WT	KH	06/12/98 08:00AM
CHLOROMETHANE	EPA 624 S	<2.5 UG/KG DRY WT	KH	06/12/98 08:00AM
DIBROMOCHLOROMETHANE	EPA 624 S	<2.5 UG/KG DRY WT	KH	06/12/98 08:00AM
DICHLORODIFLUOROMETHANE	EPA 624 S	<2.5 UG/KG DRY WT	KH	06/12/98 08:00AM
1,1-DICHLOROETHANE	EPA 624 S	<2.5 UG/KG DRY WT	KH	06/12/98 08:00AM
1,2-DICHLOROETHANE	EPA 624 S	<2.5 UG/KG DRY WT	KH	06/12/98 08:00AM
1,1-DICHLOROETHENE	EPA 624 S	<2.5 UG/KG DRY WT	KH	06/12/98 08:00AM
TRANS-1,2-DICHLOROETHENE	EPA 624 S	<2.5 UG/KG DRY WT	KH	06/12/98 08:00AM
1,2-DICHLOROPROPANE	EPA 624 S	<2.5 UG/KG DRY WT	KH	06/12/98 08:00AM
CIS-1,3-DICHLOROPROPENE	EPA 624 S	<2.5 UG/KG DRY WT	KH	06/12/98 08:00AM
TRANS-1,3-DICHLOROPROPENE	EPA 624 S	<2.5 UG/KG DRY WT	KH	06/12/98 08:00AM
DICHLOROMETHANE	EPA 624 S	<2.5 UG/KG DRY WT	KH	06/12/98 08:00AM
1,1,2,2-TETRACHLOROETHANE	EPA 624 S	<2.5 UG/KG DRY WT	KH	06/12/98 08:00AM
TETRACHLOROETHENE	EPA 624 S	<2.5 UG/KG DRY WT	KH	06/12/98 08:00AM
1,1,1-TRICHLOROETHANE	EPA 624 S	<2.5 UG/KG DRY WT	KH	06/12/98 08:00AM
1,1,2-TRICHLOROETHANE	EPA 624 S	<2.5 UG/KG DRY WT	KH	06/12/98 08:00AM

Report Continues

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Report No. 23736
Subject: MAY PORT NAVAL WASTE TANK
Received: JUN 04 1998

Date JUN 16 1998

DOH/DEP # 82135/E82031

ELLIS ENVIRONMENTAL GROUP, L.L.C.
611 N.W. 60TH ST.,STE. B
GAINESVILLE, FL 32607

RESULTS OF ANALYSIS	ANALYSIS METHOD	D. LMT		ANALYST	ANALYSIS DATE/TIME
Sample No. 1 (Continued)					
TRICHLOROETHENE	EPA 624 S	<2.5 UG/KG DRY WT		KH	06/12/98 08:00AM
TRICHLOROFLUOROMETHANE	EPA 624 S	<2.5 UG/KG DRY WT		KH	06/12/98 08:00AM
VINYL CHLORIDE	EPA 624 S	<2.5 UG/KG DRY WT		KH	06/12/98 08:00AM
PERCENT SOLIDS	ASTM D2216	94.70 %		MB	06/08/98 09:00AM
ARSENIC	SW 7061	1.46 MG/KG		MB	06/09/98 08:00AM
BARIUM	SW 6010	42.4 MG/KG		RF	06/10/98 12:58PM
CHROMIUM	SW 6010	46.7 MG/KG		RF	06/10/98 12:58PM
LEAD	SW 6010	142 MG/KG		RF	06/10/98 12:58PM
MERCURY	SW 7470	.188 MG/KG		MB	06/11/98 09:50AM
SELENIUM	SW 7741	< .201 MG/KG		MB	06/10/98 08:00AM
SILVER	SW 6010	< .6400 MG/KG		RF	06/12/98 11:05AM
TOTAL RECOVERABLE PETROLEUM HYD	EPA 418.1S	28000 MG/KG		KH	06/08/98 08:00AM

Additional Notes & Comments for Sample Report 23736

23736*1 EPA 624 S Subcontracted To: ENVIRO LAB 83160
23736*1 EPA 418.1S Subcontracted To: ENVIRO LAB 83160

Respectfully Submitted for ABC Research

K Hatfield for VK

Victor Kowalski, Ph.D.
Director, Quality Control

ABC Research Corporation
3437 SW 24th Avenue
Gainesville, FL 32607
Phone: 352-372-0436
Fax: 352-378-6483

CHAIN OF CUSTODY RECORD

Page ____ of ____

Customer Name	EEG
Send Results to	Joe Capella
Address	5822 NW 15th Lane
City, State, Zip	Gainesville, Fl. 32607
Phone	352-332-3888
Fax	332-3222
PO#	
Project Name or Site	NAS Mayport
Public Water System ID#	
Public Water System Name	

Public Water System Type Community____ Non-Community____ Special Non-Community____

Sample Type Raw ✓ Check____ Special____ Clearance____ Regular Distribution____

Maximum Resident Time____ Well____ Composite____ Plant Tap____ Resample____

Requested Completion Date

(Call for pricing for rush analysis)

Mayport Naval Air Waste Tank

Date	Time	Sample ID	Comp	Grab	Water: Drinking	Water: Non-DW	Soil	Other	8010	8020	TRPH	RCRA8							
		Container																	
		Preservative																	
		Soil																	

THIS AREA FOR LAB USE ONLY

ABC Sample # 23736

Customer # 13125

Lab ID#	Sample Conditions

SAMPLED BY	RELINQUISHED BY	RECEIVED BY
Signature J.A. Capella	Signature J.A. Capella Date 6-4-98	Signature K Hatfield Date 6-4-98
Printed Name J.A. CAPELLA	Printed Name Time 2:45	Printed Name K Hatfield Time 2:45
Company ELLIS Environmental	Company	Company

COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY	RECEIVED BY
	Signature Date	Signature Date
	Printed Name Time	Printed Name Time
	Company	Company

Sampling Fee

Equipment Rental Fee

Kit Prepared by

Shipped by

Tracking #

IntraLabs

Page: 1
June 11, 98
Report#: 9806000259
Order #: 80037088
FDEP CompQAP#920323

I.W.S. Tom Reeder
1640 Talleyrand Ave.
Jacksonville, FL 32206

Sample Id: 2452
Collected: 06/04/98 11:30:
Received: 06/05/98 10:00
Collected by: Client

Site location/Project
2452

PARAMETER	Result	Units	Method	Det.Limit	Extracted	Analyzed	Analyst
Arsenic, TCLP	BDL	mg/L	1311/7061A	0.010	06/05/98	06/08/98	E86349
Barium, TCLP	BDL	mg/L	1311/7080A	0.100	06/05/98	06/08/98	E86349
Cadmium, TCLP	BDL	mg/L	1311/7130	0.050	06/05/98	06/08/98	E86349
Chromium, TCLP	BDL	mg/L	1311/7190	0.100	06/05/98	06/08/98	E86349
Lead, TCLP	0.071	mg/L	1311/7421	0.005	06/05/98	06/09/98	E86349
Mercury, TCLP (Cold Vapor AA)	BDL	mg/L	1311/7470A	0.000	06/05/98	06/08/98	E86349
Selenium, TCLP	BDL	mg/L	1311/7741A	0.010	06/05/98	06/08/98	E86349
Silver, TCLP	BDL	mg/L	1311/7760A	0.100	06/05/98	06/08/98	E86349
TCLP Extraction Procedure	DONE		1311 Extra		--------	--------	E86349

Report Comments:

BDL-Indicates Analyte is Below Detection Limit
MEDF: Matrix Effected Dilution Factor
Qualifier following result conforms to FAC 62-160 Table 7
Unless otherwise noted,mg/Kg denotes wet weight
62-[illegible]: If the MDL using the most sensitive and currently available technology is higher than a specific criterion, the PQL shall be used.

Thomas A. Carr

Thomas A.Carr , Principal

ATTACHMENT

B

MIS Marine Industrial Services, Inc.

P.O. Box 43175
Jacksonville, FL
32203-3175
(904) 346-3266

July 28,1998

Ellis Environmental
611 NW 60th Street, Suite B
Gainsville, FL 32607
Phone: (352)332-3888
Fax: (352)332-3222

Subject: Disposal of 1-10,000 gallon underground storage tank removed from Mayport Naval Air Station

Attn.: Mr. Joe Capella

Dear Joe,

This letter is to verify that the 10,000 gallon underground storage tank removed from Mayport Naval Air Station, Jacksonville FL by Marine Industrial Services on July 6, 1998 for Ellis Environmental was cleaned and transported to Berman Brothers Inc. 2500 Evergreen Av. Jacksonville, FL for recycling as steel scrap.

Sincerely,

Tom Phillips

Marine Industrial Services, Inc.

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. FL9170024260 — Manifest Document No. 7472

2. Page 1 of — W.O. #2976

38226

3. Generator's Name and Mailing Address
MAYPORT NAVAL AIR STATION
~~BUILDING 1??0~~ Bldg 1986

4. Generator's Phone (904) 270-6468

MIS #1200

5. Transporter 1 Company Name: MARINE INDUSTRIAL SERVICES
6. US EPA ID Number: FL 0 0 0 0 9 0 8 3 7 6
A. Transporter's Phone: 904-346-2266

7. Transporter 2 Company Name:
8. US EPA ID Number:
B. Transporter's Phone:

9. Designated Facility Name and Site Address
INC
11122 WAYCROSS HWY
SCREVEN, GA

10. US EPA ID Number: 2 9 5 1 0 2 0 0 1 2 3 6 1

C. Facility's Phone: 912-579-9979

11. Waste Shipping Name and Description	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a. PETROLEUM CONTAMINATED SOIL	0 0 1	R 0	23	CY
b.				
c.				
d.				

D. Additional Descriptions for Materials Listed Above
a) petroleum contaminated soil/

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name	Signature	Month Day Year
Wayne C. HAGWOOD	Wayne C. Hagwood	07 28 98

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
TOM PHILLIPS: MIS	Tom Phillips	07 29 98

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year
Peggy Crews	Peggy Crews	7 29 98

GENERATOR / TRANSPORTER / FACILITY

TRANSPORTER #1

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No. 9409

2. Page 1 of

W.O. #2976

3. Generator's Name and Mailing Address
MAYPORT NAVAL AIR STATION
BUILDING #250
MAYPORT, FL

4. Generator's Phone ( )

MIS #1200

5. Transporter 1 Company Name
MARINE INDUSTRIAL SERVICES INC.

6. US EPA ID Number
FL000009 08376

A. Transporter's Phone
(904)-346-3266

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address
ENERSY INC.
11122 WAYCROSS HWY
SCREVEN, GA

10. US EPA ID Number
295 102 0 123 61

C. Facility's Phone
(912)-579-9979

11. Waste Shipping Name and Description	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a. PETROLEUM CONTAMINATED SOIL	23 ~~001~~	RO ~~CY~~	0 1227	CY
b.				
c.				
d.				

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name

Signature [signature]

Month Day Year
7 6 98

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name
TOM PHILLIPS, MIS

Signature Tom Phillips

Month Day Year
7 6 98

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name

Signature Peggy Crews

Month Day Year
7 22 98

GENERATOR / TRANSPORTER / FACILITY

TRANSPORTER #1

APPENDIX C

LIMITED SITE ASSESSMENT LETTER REPORT (TtNUS, 1999)

TETRA TECH NUS, INC.
794 S. Military Trail ■ Deerfield Beach, Florida 33442
(954) 570-5885 ■ FAX (954) 570-5974 ■ www.tetratech.com

TtNUS/DFB-99-103/7867/3.2

23 March, 1999

Project Number 7867

Commanding Officer
Department of the Navy
Southern Division
Naval Facilities Engineering Command
ATTN: Ms. Beverly Washington (Code 1848)
Remedial Project Manager
2155 Eagle Drive, P.O. Box 10068
North Charleston, South Carolina 29411-0068

Reference: Clean Contract No. N62467-94-D0888
Contract Task Order No. 0064A

Subject: Site Assessment Report for UST Site 250
Naval Station Mayport, Florida

Dear Ms. Washington:

Tetra Tech NUS, Inc. (TtNUS) has completed a limited site assessment at UST Site 250. UST Site 250 was the former location of a 12,500-gallon waste oil tank. This limited site assessment was performed to investigate the presence of petroleum constituents in the vadose zone and in the shallow aquifer beneath UST Site 250. A tank closure report previously submitted for this tank was deemed to be inaccurate, therefore the activities described herein were requested by SouthDiv Navy to be performed.

FIELD INVESTIGATION

TtNUS mobilized to UST Site 250 on March 15, 1999 to install six Geoprobe™ soil borings and collect soil and groundwater samples. Four soil samples were collected from the vadose zone in soil borings GB-01, GB-02, GB-03, and GB-04. Two groundwater samples were collected from the shallow aquifer by use of temporary well points installed in soil borings GB-01 and GB-02. In each of the borings, soil was collected at 2 foot intervals and screened with an Organic Vapor Analyzer (OVA) for detection of organic vapors. Locations of Geoprobe™ soil borings are included on **Figure 1**. Lithologic boring logs from each of the borings are included as **Attachment 1**. OVA screening results are summarized on **Table 1**.

INVESTIGATION RESULTS

OVA screening results indicate that organic vapors were detected above FDEP guidelines for a waste oil site. In accordance with Rule 62-770.200 (2), Florida Administrative Code (FAC), OVA headspace levels in excess of 50 parts per million (ppm) for a waste oil site indicate the presence of "excessively contaminated" soils. Soil collected from borings GB-01, GB-02, GB-03 and GB-04 had readings above the FDEP limit. OVA readings ranged from 10 ppm to greater than 1000 ppm.

Groundwater samples collected from the temporary well points GB-01 and GB-02 were analyzed for Volatile Organics, Semi-volatile Organics, Total Recoverable Petroleum Hydrocarbons (TRPH), RCRA metals and TCLP metals. Laboratory analytical results indicate that the sample collected from well point GB-02 contained TRPH levels of 11 mg/l, above FDEP Groundwater Cleanup Target Levels (GCTLs) of 5 mg/l. All other parameters tested for in the groundwater collected from well points GB-01 and GB-02 were not detected above FDEP GCTLs. A summary of groundwater analytical results is presented as **Table 2**.

Soil samples collected from the soil borings GB-01, GB-02 GB-03 and GB-04 were analyzed for Volatile Organics, Semi-volatile Organics, TRPH, RCRA metals, and TCLP metals. Results indicated that TRPH levels were detected above the FDEP Soil Cleanup Target Levels (SCTLs) in soil borings GB-01, GB-03 and GB-04. A summary of soil analytical results is presented as **Table 3**. Copies of soil and groundwater analytical reports are presented in **Attachment 2.**

SUMMARY

The results of TtNUS' limited scope assessment at UST Site 250 suggest the following:

- Organic vapors in excess of 50 ppm were detected in soil collected from soil borings GB-01 through GB-04.
- Laboratory analysis of soil collected from soil borings GB-01, GB-03, and GB-04 indicates the presence of TRPH at levels above FDEP SCTLs.
- Laboratory analysis of groundwater collected from temporary well points GB-01 and GB-02 indicates that volatiles, semi-volatiles, and metals compounds are not present in the shallow aquifer. TRPH concentrations above FDEP GCTLs were detected in the groundwater collected from well point GB-02.

If you have any questions regarding this report or require further information, please contact me at (954) 570-5885 extension 250.

Very truly yours,

Rick Ofsanko

Rick Ofsanko
Task Order Manager

RO/jj

Enclosures (1)

c: Ms. D. Wroblewski (w/o enclosure)
Mr. M. Perry/File
Ms. C. Mitchell, NS Mayport

TABLE 1
SOIL VAPOR MEASUREMENTS

Soil Boring No.	Date of Measurement	Sample Interval (feet bls)	Total Readings (ppm)	Carbon Filtered (ppm)	Net Reading (ppm)
GB-01	3/15/99	0-2	0	0	0
		2-4	50	10	40
		4-6	>1000	0	>1000
GB-02	3/15/99	0-2	0	0	0
		2-4	220	20	200
		4-6	340	40	300
GB-03	3/15/99	0-2	2	2	0
		2-4	250	0	250
		4-6	>1000	0	>1000
GB-04	3/15/99	0-2	0	0	0
		2-4	320	20	300
		4-6	340	40	300
GB-05	3/15/99	0-2	0	0	0
		2-4	10	10	0
		4-6	0	0	0
GB-06	3/15/99	0-2	0	0	0
		2-4	0	0	0
		4-6	30	20	10

ppm = part per million equivalent methane
bls = below land surface

TABLE 2: GROUNDWATER MONITORING WELL ANALYTICAL SUMMARY

Facility Name: UST Site 250, Naval Station Mayport

< = below laboratory detection limit
NCD = no compounds detected
Analytical Results = ppb (ug/l)

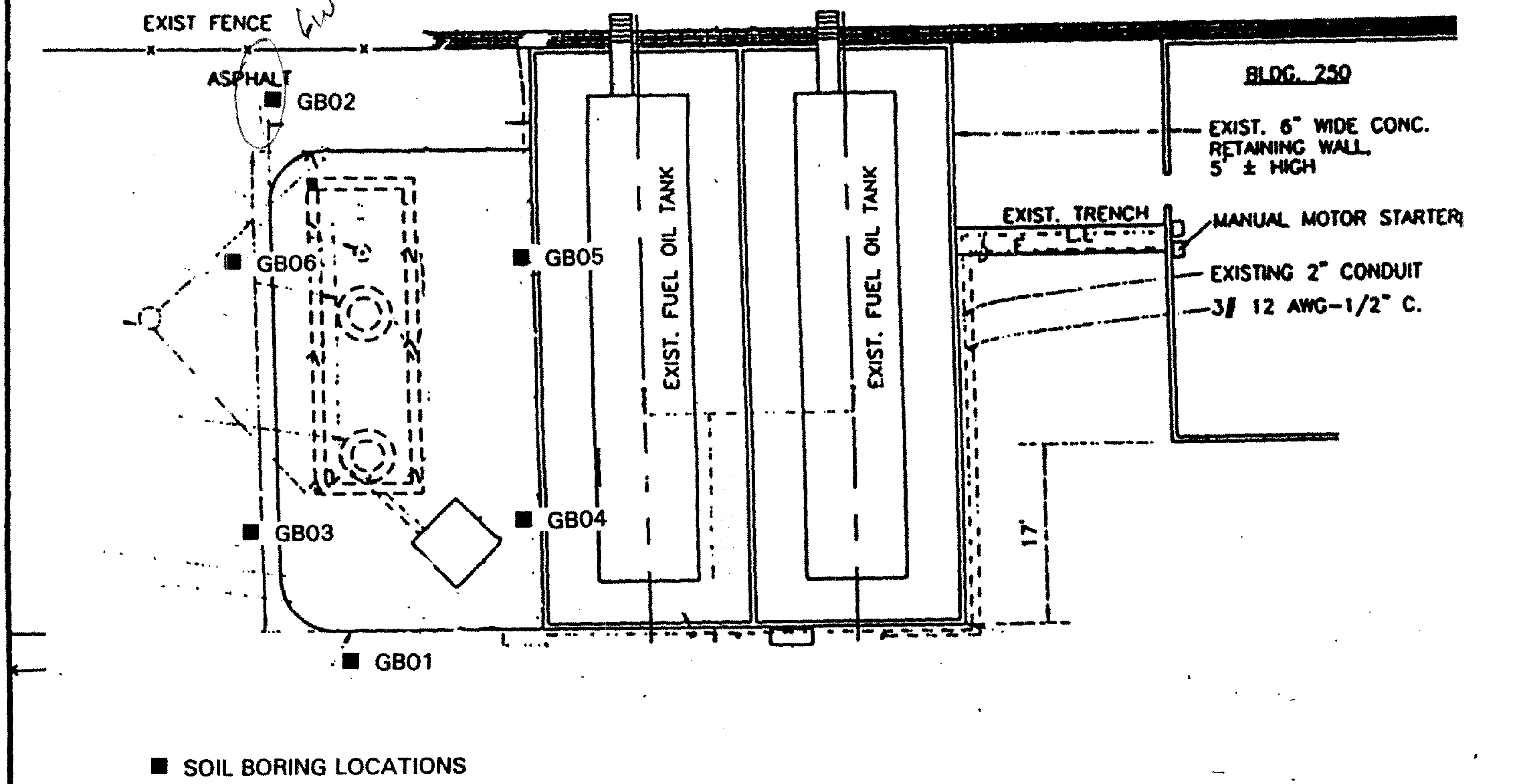
Sample				Ethyl	Total				
Location	**Date**	**Benzene**	**Toluene**	**Benzene**	**Xylenes**	**MTBE**	**Napth.**	**Lead**	**TRPH**
0250-GW-GB01-001	3/15/99	<1.0	<2.5	<2.5	<5.0	<25	12	6.6	1200
0250-GW-GB02-001	3/15/99	<1.0	<1.0	<1.0	<2.0	<10	<10	5.0	11000
FDEP Target Levels		1.0	40.0	30.0	20.0	35.0	20.0	15.0	5000.0

TABLE 3: SOIL ANALYTICAL SUMMARY

Facility Name: UST Site 250, Naval Station Mayport

Sample				Ethyl		
Location	**Date**	**Benzene**	**Toluene**	**Benzene**	**TRPH**	**Napth.**
0250-SS-GB01-0406	3/15/99	<1.1	<1.1	<1.1	**5100.0**	8.00
0250-SS-GB02-0406	3/15/99	<0.005	<0.005	<0.005	18.0	<0.37
0250-SS-GB03-0406	3/15/99	<1.2	<1.2	<1.2	**6500.0**	17.00
0250-SS-GB04-0406	3/15/99	<0.54	<0.540	<0.54	**6700.0**	<3.6
FDEP Target Levels		1.50	2000.0	240.0	2500.0	8600.00

ACAD: 7846CM06.dwg 03/15/99 KW



DRAWN BY HJP DATE 12/28/98		SITE MAP	CONTRACT NO.
CHECKED BY DATE			APPROVED BY DATE
COST/SCHED-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 1 REV. 0

FORM CADD NO. SDV_AH12.DVG - REV 0 - 1/20/98

ATTACHMENT 1
Lithologic borings

LOG OF BORING GB01

PROJECT NO: 7867.DC	PROJECT NAME: UST SITE 250
PROJECT LOCATION: UST SITE 250	DATE DRILLED: 3-15-99 / 1130 - 1215
DRILLING COMPANY: PARTRIDGE	SURFACE ELEVATION: Feet
DRILLING METHOD: DPT	BORING DIAMETER: Inches
DRILLING RIG: DPT	GEOLOGIST: R. OFSANKO

DEPTH feet	SAMPLE NUMBER	BLOWS/FT.	PID (ppm) Sample	PID (ppm) B. Zone	PID (ppm) Borehole	PID (ppm) Drill B. Z. TOTAL	GRAPHIC LOG	USCS/ROD	GEOLOGIC DESCRIPTION Density/Consistency, Hardness, Color	WELL DIAGRAM
	0-2			—	0 / 0	0			limerock (unconsolidated); fill	
1.5'										
5	2-4	~~SS~~		—	50 / ~~4~~0	40			brown/dark brown fn/med grain. sand, subangular	
	4-6	SS		—	0 / >1000	>1000				
10									10' borehole terminated @ 10 ft bls	
15									soil sample collected for lab analysis from boring interval of 4-6 ft bls Sample ID is 0250-SS-GB01-0406	
20–25									Ground water sample collected from pre-packed temp well for lab analysis. Sample ID is: 0250-GW-GB01-001	
30										
35										
40										

JOB NUMBER

LOG OF BORING GB02

Page 1 of

PROJECT NO: 7867. DC	PROJECT NAME: UST SITE 250
PROJECT LOCATION: UST SITE 250	DATE DRILLED: 3.15.99/ 1220 – 1250
DRILLING COMPANY: PARTRIDGE	SURFACE ELEVATION: Feet
DRILLING METHOD: DPT	BORING DIAMETER: Inches
DRILLING RIG: DPT	GEOLOGIST: R. OFSANKO

DEPTH feet	SAMPLE NUMBER	BLOWS/FT.	PID (ppm) Sample	PID (ppm) B. Zone	PID (ppm) Borehole	PID (ppm) Drill B. Z. (TOTAL)	GRAPHIC LOG	USCS/RQD	GEOLOGIC DESCRIPTION Density/Consistency, Hardness, Color	WELL DIAGRAM
									Limestone (unconsolidated fill	
	0-2			–	0/0	0			1'	
	2-4			–	220/20	200			brown/dark brown fn/med gr. quartz sand, subangular	
5	4-6			–	340/40	300				
10									10' borehole terminated at 10 ft bls	
15									Soil sample collected for lab analysis from boring interval 4-6 ft bls. Sample ID is 0250-SS-GB02-0406	
20										
25									Ground water sample collected from pre-packed temp well for lab analysis. Sample ID is: 0250-GW-GB02-001	
30										
35										
40										

LOG OF BORING GB03

Page 1 of

PROJECT NO: 7867.DC		PROJECT NAME: UST SITE 250	
PROJECT LOCATION: UST SITE 250		DATE DRILLED: 3-15-99 / 1255-1310	
DRILLING COMPANY: PARTRIDGE		SURFACE ELEVATION: Feet	
DRILLING METHOD: DPT		BORING DIAMETER: Inches	
DRILLING RIG: DPT		GEOLOGIST: R. OFSANKO	

DEPTH feet	SAMPLE NUMBER	BLOWS/FT.	PID (ppm) Sample	B. Zone	Borehole	Drill B. Z.	GRAPHIC LOG	USCS/RQD	GEOLOGIC DESCRIPTION Density/Consistency, Hardness, Color	WELL DIAGRAM
						TOTAL			dark organic rich top soil ↓	
	0-2				2/2	0			1'	
	2-4				250/0	250			brown/dark brown fn/med gr. sand, subangular	
5	4-6				>1000/0	>1000			↓	
									7' borehole terminated @ 7 ft bls	
10										
									Soil sample collected for lab analysis from boring interval 4-6 ft bls. Sample ID is:	
15									0250-SS-GB03-0406	
20										
25										
30										
35										
40										

JOB NUMBER

LOG OF BORING GB04

PROJECT NO: 7867. DC
PROJECT LOCATION: UST SITE 250
DRILLING COMPANY: PARTRIDGE
DRILLING METHOD: DPT
DRILLING RIG: DPT

PROJECT NAME: UST SITE 250
DATE DRILLED: 3.15.99 / 1335 - 1410
SURFACE ELEVATION: Feet
BORING DIAMETER: Inches
GEOLOGIST: R. OFSANKO

DEPTH feet	SAMPLE NUMBER	BLOWS/FT.	PID (ppm) Sample	B. Zone	Borehole	Drill B. Z.	GRAPHIC LOG	USCS/RQD	GEOLOGIC DESCRIPTION Density/Consistency, Hardness, Color	WELL DIAGRAM
	0-2			—	0/0	TOTAL 0			brown/dark brown fn/med grain. quartz sand, subangular	
	2-4			—	320/20	300				
5	4-6			—	340/40	300				
									- borehole terminated @ 7 ft bls.	
10										
									Soil sample collected for lab. analysis from boring interval 4-6 ft bls. Sample ID is: 0250-SS-GB04-0406	
15										
20										
25										
30										
35										
40										

LOG OF BORING GB05

PROJECT NO: 7867. DC
PROJECT LOCATION: UST SITE 250
DRILLING COMPANY: PARTRIDGE
DRILLING METHOD: DPT
DRILLING RIG: DPT

PROJECT NAME: UST SITE 250
DATE DRILLED: 3.15.99 / 1415 - 1435
SURFACE ELEVATION: Feet
BORING DIAMETER: Inches
GEOLOGIST: R. OFSANKO

DEPTH feet	SAMPLE NUMBER	BLOWS/FT.	PID (ppm) Sample	B. Zone	Borehole	Drill B. Z. TOTAL	GRAPHIC LOG	USCS/RQD	GEOLOGIC DESCRIPTION Density/Consistency, Hardness, Color	WELL DIAGRAM
	0-2				0/0	0			brown/dark brown fn/med grain quartz sand, subangular	
	2-4				10/10	0				
5	4-6				0/0	0				
7'									borehole terminated @ 7 ft bls.	
10										
15										
20										
25										
30										
35										
40										

LOG OF BORING GB06

PROJECT NO: 7867.DC
PROJECT LOCATION: UST SITE 250
DRILLING COMPANY: PARTRIDGE
DRILLING METHOD: DPT
DRILLING RIG: DPT

PROJECT NAME: UST SITE 250
DATE DRILLED: 3.15.99 / 1500 – 1530
SURFACE ELEVATION: Feet
BORING DIAMETER: Inches
GEOLOGIST: R. OFSANKO

DEPTH feet	SAMPLE NUMBER	BLOWS/FT.	PID (ppm) Sample	B. Zone	Borehole	Drill B. Z. (TOTAL)	GRAPHIC LOG	USCS/RQD	GEOLOGIC DESCRIPTION Density/Consistency, Hardness, Color	WELL DIAGRAM
	0-2			–	0/0	0			brown/dark brown fn/med gr. quartz sand	
	2-4			–	0/0	0				
5	4-6			–	30/20	10				
									– borehole terminated @ 7' bls.	
10										
15										
20										
25										
30										
35										
40										

ATTACHMENT 2
Copies of Laboratory Analytical Results

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES. INC.

2846 Industrial Plaza Drive (32301) • P.O. Box 13056 • Tallahassee, FL 32317-3056 • (850) 878-3994 • Fax (850) 878-9504

LOG NO: T9-30774
Received: 16 MAR 99
Reported: 19 MAR 99

Mr. Arnold Lamb, QA Officer
Tetra Tech NUS, Inc.
794 South Military Drive
Deerfield Beach, FL 33442

Client PO. No.: N7867-P99204(SS)

Project: VST Site 250/Bravo Pier-Mayport
Sampled By: RO
Code: 160190324

REPORT OF RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
30774-1	0250-GW-GB01-001	03-15-99/1215	TTN004
30774-2	0250-GW-GB02-001	03-15-99/1255	TTN004

PARAMETER	30774-1	30774-2
Volatiles by GC/MS (8260)		
Benzene, ug/l	<1.0*J	<1.0
Bromodichloromethane, ug/l	<2.5*F65	<1.0
Bromoform, ug/l	<2.5*F65	<1.0
Bromomethane, ug/l	<2.5*F65	<1.0
Carbon tetrachloride, ug/l	<2.5*F65	<1.0
Chlorobenzene, ug/l	<2.5*F65	<1.0
Chloroethane, ug/l	<2.5*F65	<1.0
Chloroform, ug/l	<2.5*F65	<1.0
Chloromethane, ug/l	<2.5*F65	<1.0
Dibromochloromethane, ug/l	<2.5*F65	<1.0
1,1-Dichloroethane, ug/l	<2.5*F65	<1.0
1,2-Dichloroethane, ug/l	<2.5*F65	<1.0
1,1-Dichloroethene, ug/l	<2.5*F65	<1.0
cis-1,2-Dichloroethene, ug/l	<2.5*F65	<1.0
trans-1,2-Dichloroethylene, ug/l	<2.5*F65	<1.0
cis-1,3-Dichloropropene, ug/l	<2.5*F65	<1.0
trans-1,3-Dichloropropene, ug/l	<2.5*F65	<1.0
Ethylbenzene, ug/l	<2.5*F65	<1.0
Methylene chloride (Dichloromethane), ug/l	<5*J	<5.0
1,1,2,2-Tetrachloroethane, ug/l	<2.5*F65	<1.0
Tetrachloroethene, ug/l	<2.5*F65	<1.0
Toluene, ug/l	<2.5*F65	<1.0
1,1,1-Trichloroethane, ug/l	<2.5*F65	<1.0
1,1,2-Trichloroethane, ug/l	<2.5*F65	<1.0

SL SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

2846 Industrial Plaza Drive (32301) • P.O. Box 13056 • Tallahassee, FL 32317-3056 • (850) 878-3994 • Fax (850) 878-9504

LOG NO: T9-30774
Received: 16 MAR 99
Reported: 19 MAR 99

Mr. Arnold Lamb, QA Officer
Tetra Tech NUS, Inc.
794 South Military Drive
Deerfield Beach, FL 33442

Client PO. No.: N7867-P99204(SS)

Project: VST Site 250/Bravo Pier-Mayport
Sampled By: RO
Code: 182590322

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
30774-1	0250-GW-GB01-001	03-15-99/1215	TTN004
30774-2	0250-GW-GB02-001	03-15-99/1255	TTN004

PARAMETER	30774-1	30774-2
Vinyl chloride, ug/l	<2.5*F65	<1.0
Surrogate - Toluene-d8	101 %	98 %
Surrogate - 4-Bromofluorobenzene	106 %	102 %
Surrogate - Dibromofluoromethane	108 %	106 %
2-Chloroethylvinyl Ether, ug/l	<25	<10
Acrolein, ug/l	<50	<20
Acrylonitrile, ug/l	<50	<20
Xylenes, ug/l	<5.0*F65	<2.0
Methyl tert-butyl ether (MTBE), ug/l	<25*F65	<10
Analyst	MTM	MTM
Analysis Date	03.18.99	03.18.99
Batch ID	0315M	0315M
Dilution Factor	2.5	1.0
NIST Library Search (VOC)	Attached	Attached

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& ENVIRONMENTAL SERVICES, INC.

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LOG NO: T9-30774
Received: 16 MAR 99
Reported: 19 MAR 99

Mr. Arnold Lamb, QA Officer
Tetra Tech NUS, Inc.
794 South Military Drive
Deerfield Beach, FL 33442

Client PO. No.: N7867-P99204(SS)

Project: VST Site 250/Bravo Pier-Mayport
Sampled By: RO
Code: 175990319

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
30774-1	0250-GW-GB01-001	03-15-99/1215	TTN004
30774-2	0250-GW-GB02-001	03-15-99/1255	TTN004

PARAMETER	30774-1	30774-2
Semivolatile Organics (8270)		
1,3-Dichlorobenzene, ug/l	<10	<10
1,4-Dichlorobenzene, ug/l	<10	<10
Hexachloroethane, ug/l	<10	<10
bis(2-Chloroethyl)ether, ug/l	<10	<10
1,2-Dichlorobenzene, ug/l	<10	<10
bis(2-Chloroisopropyl)ether, ug/l	<10	<10
n-Nitrosodi-n-propylamine, ug/l	<10	<10
Nitrobenzene, ug/l	<10	<10
Hexachlorobutadiene, ug/l	<10	<10
1,2,4-Trichlorobenzene, ug/l	<10	<10
Isophorone, ug/l	<10	<10
Naphthalene, ug/l	12	<10
bis(2-Chloroethoxy)methane, ug/l	<10	<10
Hexachlorocyclopentadiene, ug/l	<10	<10
2-Chloronaphthalene, ug/l	<10	<10
Acenaphthylene, ug/l	<10	<10
Acenaphthene, ug/l	<10	<10
Dimethylphthalate, ug/l	<10	<10
2,6-Dinitrotoluene, ug/l	<10	<10
Fluorene, ug/l	<10	<10
4-Chlorophenylphenyl ether, ug/l	<10	<10
2,4-Dinitrotoluene, ug/l	<10	<10
Diethylphthalate, ug/l	<10	<10
N-Nitrosodiphenylamine/Diphenylamine, ug/l	<10	<10

Note:
Semi-volatile organics were analyzed by EPA Method 8270 to detect the target compounds within the Priority Pollutant List. A result of using Method 8270 is that some of the semi-volatile compounds could not be reported at detection limits below the FDEP Groundwater Target Cleanup Levels. Specifically, the following compounds had to be reported at a detection limit of 10 µg/L: Chrysene, benzo (a) anthracene, benzo (b) fluoranthene, benzo (k) flouranthene, benzo (a) pyrene, indeno (1,2,3-cd) pyrene, and dibenzo (a,h) anthracene. The laboratory has re-evaluated the data from the mass spectrometer and concluded that none of these compounds were identified, but detection limits could not be lowered for the compounds.

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

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LOG NO: T9-30774
Received: 16 MAR 99
Reported: 19 MAR 99

Mr. Arnold Lamb, QA Officer
Tetra Tech NUS, Inc.
794 South Military Drive
Deerfield Beach, FL 33442

Client PO. No.: N7867-P99204(SS)

Project: VST Site 250/Bravo Pier-Mayport
Sampled By: RO
Code: 175990319

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
30774-1	0250-GW-GB01-001	03-15-99/1215	TTN004
30774-2	0250-GW-GB02-001	03-15-99/1255	TTN004

PARAMETER	30774-1	30774-2
Hexachlorobenzene, ug/l	<10	<10
4-Bromophenyl phenyl ether, ug/l	<10	<10
Phenanthrene, ug/l	<10	<10
Anthracene, ug/l	<10	<10
Di-n-butylphthalate, ug/l	<10	<10
Fluoranthene, ug/l	<10	<10
Pyrene, ug/l	<10	<10
Benzidine, ug/l	<80	<80
Butylbenzylphthalate, ug/l	<10	<10
bis(2-Ethylhexyl)phthalate, ug/l	<10	<10
*Chrysene, ug/l — 5	<10	<10
*Benzo(a)anthracene, ug/l — 0.2	<10	<10
3,3'-Dichlorobenzidine, ug/l	<20	<20
Di-n-octylphthalate, ug/l	<10	<10
*Benzo(b)fluoranthene, ug/l — 0.2	<10	<10
*Benzo(k)fluoranthene, ug/l — 0.5	<10	<10
*Benzo(a)pyrene, ug/l — 0.2	<10	<10
*Indeno(1,2,3-cd)pyrene, ug/l — 0.2	<10	<10
*Dibenzo(a,h)anthracene, ug/l — 0.2	<10	<10
Benzo(g,h,i)perylene, ug/l	<10	<10
N-Nitrosodimethylamine, ug/l	<10	<10
2-Chlorophenol, ug/l	<10	<10
2-Nitrophenol, ug/l	<10	<10
Phenol, ug/l	<10	<10
2,4-Dimethylphenol, ug/l	<10	<10

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

2846 Industrial Plaza Drive (32301) • P.O. Box 13056 • Tallahassee, FL 32317-3056 • (850) 878-3994 • Fax (850) 878-9504

LOG NO: T9-30774
Received: 16 MAR 99
Reported: 19 MAR 99

Mr. Arnold Lamb, QA Officer
Tetra Tech NUS, Inc.
794 South Military Drive
Deerfield Beach, FL 33442

Client PO. No.: N7867-P99204(SS)

Project: VST Site 250/Bravo Pier-Mayport
Sampled By: RO
Code: 182590322

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
30774-1	0250-GW-GB01-001	03-15-99/1215	TTN004
30774-2	0250-GW-GB02-001	03-15-99/1255	TTN004

PARAMETER	30774-1	30774-2
2,4-Dichlorophenol, ug/l	<10	<10
2,4,6-Trichlorophenol, ug/l	<10	<10
4-Chloro-3-methylphenol, ug/l	<10	<10
2,4-Dinitrophenol, ug/l	<50	<50
2-Methyl-4,6-dinitrophenol, ug/l	<50	<50
Pentachlorophenol, ug/l	<50	<50
4-Nitrophenol, ug/l	<50	<50
1,2-Diphenylhydrazine, ug/l	<10	<10
Surrogate - 2-Fluorophenol	68 %	69 %
Surrogate - Phenol d5	70 %	71 %
Surrogate - Nitrobenzene - d5	78 %	78 %
Surrogate - 2-Fluorobiphenyl	66 %	50 %
Surrogate - 2,4,6-Tribromophenol	89 %	73 %
Surrogate - Terphenyl - d14	39 %	28 %
Prep Date	03.16.99	03.16.99
Analyst	PS	PS
Analysis Date	03.18.99	03.18.99
Batch ID	0316H	0316A
Dilution Factor	1.0	1.0
NIST Library Search (BN/A)	Attached	Attached

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& ENVIRONMENTAL SERVICES, INC.

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LOG NO: T9-30774
Received: 16 MAR 99
Reported: 19 MAR 99

Mr. Arnold Lamb, QA Officer
Tetra Tech NUS, Inc.
794 South Military Drive
Deerfield Beach, FL 33442

Client PO. No.: N7867-P99204(SS)

Project: VST Site 250/Bravo Pier-Mayport
Sampled By: RO
Code: 175990319

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
30774-1	0250-GW-GB01-001	03-15-99/1215	TTN004
30774-2	0250-GW-GB02-001	03-15-99/1255	TTN004

PARAMETER	30774-1	30774-2
Petroleum Range Organics (FL-PRO)		
Petroleum Hydrocarbons , mg/l	1.2	11
Surrogate, o-Terphenyl	79 %	*F36
Surrogate-C39	88 %	73 %
Prep Date	03.16.99	03.16.99
Analyst	BM	BM
Analysis Date	03.17.99	03.17.99
Batch ID	0316D	0316D
Dilution Factor	1.0	1.0
RCRA Metals (6010)		
Arsenic, mg/l	<0.010	<0.010
Barium, mg/l	0.025	0.030
Cadmium, mg/l	<0.0050	<0.0050
Chromium, mg/l	0.017	0.013
Lead, mg/l	0.0066	<0.0050
Selenium, mg/l	<0.010	<0.010
Silver, mg/l	<0.010	<0.010
Prep Date	03.16.99	03.16.99
Analyst	CLD	CLD
Analysis Date	03.17.99	03.17.99
Batch ID	0316J	0316J
Dilution Factor	1.0	1.0

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Project: VST Site 250/Bravo Pier-Mayport
Sampled By: RO
Code: 175990319

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
30774-1	0250-GW-GB01-001	03-15-99/1215	TTN004
30774-2	0250-GW-GB02-001	03-15-99/1255	TTN004

PARAMETER	30774-1	30774-2
Mercury (7470)		
Mercury, mg/l	<0.00020	<0.00020
Prep Date	03.16.99	03.16.99
Analyst	KW	KW
Analysis Date	03.17.99	03.17.99
Batch ID	0316U	0316U
Dilution Factor	1.0	1.0
TCLP extraction - non-volatile (1311)		
TCLP Extraction Date	03.16.99	03.16.99
Prep Date	03.16.99	03.16.99
Analyst	BP	BP
Batch ID	0316T	0316T
Metals in TCLP Extract (6010)		
Arsenic (TCLP-6010), mg/l	<0.20	<0.20
Barium (TCLP-6010), mg/l	<1.0	<1.0
Cadmium (TCLP-6010), mg/l	<0.10	<0.10
Chromium (TCLP-6010), mg/l	<0.20	<0.20
Lead (TCLP-6010), mg/l	<0.20	<0.20
Selenium (TCLP-6010), mg/l	<0.50	<0.50
Silver (TCLP-6010), mg/l	<0.10	<0.10
Prep Date	03.18.99	03.18.99
Analyst	DWH	DWH
Analysis Date	03.18.99	03.18.99
Batch ID	0318O	0318O
Dilution Factor	1.0	1.0

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Project: VST Site 250/Bravo Pier-Mayport
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Code: 175990319

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
30774-1	0250-GW-GB01-001	03-15-99/1215	TTN004
30774-2	0250-GW-GB02-001	03-15-99/1255	TTN004

PARAMETER	30774-1	30774-2
Mercury in TCLP Extract (7470)		
Mercury, mg/l	<0.020	<0.020
Prep Date	03.17.99	03.17.99
Analyst	KW	KW
Analysis Date	03.17.99	03.17.99
Batch ID	0317X	0317X
Dilution Factor	100	100

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Tetra Tech NUS, Inc.
794 South Military Drive
Deerfield Beach, FL 33442

Client PO. No.: N7867-P99204(SS)

Project: VST Site 250/Bravo Pier-Mayport
Sampled By: RO
Code: 182290319

REPORT OF RESULTS

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LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
30774-3	0250-SS-GB01-0406	03-15-99/1150	TTN004
30774-4	0250-SS-GB02-0406	03-15-99/1245	TTN004
30774-5	0250-SS-GB03-0406	03-15-99/1305	TTN004
30774-6	0250-SS-GB04-0406	03-15-99/1405	TTN004

PARAMETER	30774-3	30774-4	30774-5	30774-6
Volatiles by GC/MS (8260)				
Benzene, ug/kg dw	<1100*F65	<5.0	<1200*F65	<540*F65
Bromodichloromethane, ug/kg dw	<1100*F65	<5.0	<1200*F65	<540*F65
Bromoform, ug/kg dw	<1100*F65	<5.0	<1200*F65	<540*F65
Bromomethane, ug/kg dw	<2200*F65	<10	<2400*F65	<1100*F65
Carbon tetrachloride, ug/kg dw	<1100*F65	<5.0	<1200*F65	<540*F65
Chlorobenzene, ug/kg dw	<1100*F65	<5.0	<1200*F65	<540*F65
Chloroethane, ug/kg dw	<2200*F65	<10	<2400*F65	<1100*F65
Chloroform, ug/kg dw	<1100*F65	<5.0	<1200*F65	<540*F65
Chloromethane, ug/kg dw	<2200*F65	<10	<2400*F65	<1100*F65
Dibromochloromethane, ug/kg dw	<1100*F65	<5.0	<1200*F65	<540*F65
1,1-Dichloroethane, ug/kg dw	<1100*F65	<5.0	<1200*F65	<540*F65
1,2-Dichloroethane, ug/kg dw	<1100*F65	<5.0	<1200*F65	<540*F65
1,1-Dichloroethene, ug/kg dw	<1100*F65	<5.0	<1200*F65	<540*F65
cis-1,2-Dichloroethene, ug/kg dw	<1100*F65	<5.0	<1200*F65	<540*F65
trans-1,2-Dichloroethylene, ug/kg dw	<1100*F65	<5.0	<1200*F65	<540*F65
cis-1,3-Dichloropropene, ug/kg dw	<1100*F65	<5.0	<1200*F65	<540*F65
trans-1,3-Dichloropropene, ug/kg dw	<1100*F65	<5.0	<1200*F65	<540*F65
Ethylbenzene, ug/kg dw	<1100*F65	<5.0	<1200*F65	<540*F65
Methylene chloride (Dichloromethane), ug/kg dw	<1100*F65	<5.0	<1200*F65	<540*F65
1,1,2,2-Tetrachloroethane, ug/kg dw	<1100*F65	<5.0	<1200*F65	<540*F65
Tetrachloroethene, ug/kg dw	<1100*F65	<5.0	<1200*F65	<540*F65

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Tetra Tech NUS, Inc.
794 South Military Drive
Deerfield Beach, FL 33442

Client PO. No.: N7867-P99204(SS)

Project: VST Site 250/Bravo Pier-Mayport
Sampled By: RO
Code: 182390319

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
30774-3	0250-SS-GB01-0406	03-15-99/1150	TTN004
30774-4	0250-SS-GB02-0406	03-15-99/1245	TTN004
30774-5	0250-SS-GB03-0406	03-15-99/1305	TTN004
30774-6	0250-SS-GB04-0406	03-15-99/1405	TTN004

PARAMETER	30774-3	30774-4	30774-5	30774-6
Toluene, ug/kg dw	<1100*F65	<5.0	<1200*F65	<540*F65
1,1,1-Trichloroethane, ug/kg dw	<1100*F65	<5.0	<1200*F65	<540*F65
1,1,2-Trichloroethane, ug/kg dw	<1100*F65	<5.0	<1200*F65	<540*F65
Vinyl chloride, ug/kg dw	<2200*F65	<10	<2400*F65	<1100*F65
2-Chloroethylvinyl Ether, ug/kg dw	<11000*F65	<50	<12000*F65	<5400*F65
Acrolein, ug/kg dw	<22000*F65	<100	<24000*F65	<11000*F65
Acrylonitrile, ug/kg dw	<22000*F65	<100	<24000*F65	<11000*F65
Surrogate - Toluene-d8	102 %	101 %	101 %	102 %
Surrogate - 4-Bromofluorobenzene	113 %	101 %	108 %	103 %
Surrogate - Dibromofluoromethane	129 %	127 %	128 %	128 %
Analyst	WHE	WHE	WHE	WHE
Analysis Date	03.19.99	03.19.99	03.19.99	03.19.99
Batch ID	0315N	0315N	0315N	0315N
Dilution Factor	200	1.0	200	100
NIST Library Search (VOC)	Attached	Attached	Attached	Attached

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Project: VST Site 250/Bravo Pier-Mayport
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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
30774-3	0250-SS-GB01-0406	03-15-99/1150	TTN004
30774-4	0250-SS-GB02-0406	03-15-99/1245	TTN004
30774-5	0250-SS-GB03-0406	03-15-99/1305	TTN004
30774-6	0250-SS-GB04-0406	03-15-99/1405	TTN004

PARAMETER	30774-3	30774-4	30774-5	30774-6
Semivolatile Organics (8270)				
1,3-Dichlorobenzene, ug/kg dw	<3700	<370	<3800	<3600*F65
1,4-Dichlorobenzene, ug/kg dw	<3700	<370	<3800	<3600*F65
Hexachloroethane, ug/kg dw	<3700	<370	<3800	<3600*F65
bis(2-Chloroethyl)ether, ug/kg dw	<3700	<370	<3800	<3600*F65
1,2-Dichlorobenzene, ug/kg dw	<3700	<370	<3800	<3600*F65
bis(2-Chloroisopropyl)ether, ug/kg dw	<3700	<370	<3800	<3600*F65
n-Nitrosodi-n-propylamine, ug/kg dw	<3700	<370	<3800	<3600*F65
Nitrobenzene, ug/kg dw	<3700	<370	<3800	<3600*F65
Hexachlorobutadiene, ug/kg dw	<3700	<370	<3800	<3600*F65
1,2,4-Trichlorobenzene, ug/kg dw	<3700	<370	<3800	<3600*F65
Isophorone, ug/kg dw	<3700	<370	<3800	<3600*F65
Naphthalene, ug/kg dw	8000	<370	17000	<3600*F65
bis(2-Chloroethoxy)methane, ug/kg dw	<3700	<370	<3800	<3600*F65
Hexachlorocyclopentadiene, ug/kg dw	<3700	<370	<3800	<3600*F65
2-Chloronaphthalene, ug/kg dw	<3700	<370	<3800	<3600*F65
Acenaphthylene, ug/kg dw	<3700	<370	<3800	<3600*F65
Acenaphthene, ug/kg dw	<3700	<370	<3800	<3600*F65
Dimethylphthalate, ug/kg dw	<3700	<370	<3800	<3600*F65
2,6-Dinitrotoluene, ug/kg dw	<3700	<370	<3800	<3600*F65
Fluorene, ug/kg dw	4300	<370	<3800	<3600*F65
4-Chlorophenylphenyl ether, ug/kg dw	<3700	<370	<3800	<3600*F65
2,4-Dinitrotoluene, ug/kg dw	<3700	<370	<3800	<3600*F65

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REPORT OF RESULTS

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LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
30774-3	0250-SS-GB01-0406	03-15-99/1150	TTN004
30774-4	0250-SS-GB02-0406	03-15-99/1245	TTN004
30774-5	0250-SS-GB03-0406	03-15-99/1305	TTN004
30774-6	0250-SS-GB04-0406	03-15-99/1405	TTN004

PARAMETER	30774-3	30774-4	30774-5	30774-6
Diethylphthalate, ug/kg dw	<3700	<370	<3800	<3600*F65
N-Nitrosodiphenylamine/Diphenylamine, ug/kg dw	<3700	<370	<3800	<3600*F65
Hexachlorobenzene, ug/kg dw	<3700	<370	<3800	<3600*F65
4-Bromophenyl phenyl ether, ug/kg dw	<3700	<370	<3800	<3600*F65
Phenanthrene, ug/kg dw	4800	<370	11000	<3600*F65
Anthracene, ug/kg dw	<3700	<370	<3800	<3600*F65
Di-n-butylphthalate, ug/kg dw	<3700	<370	<3800	<3600*F65
Fluoranthene, ug/kg dw	<3700	<370	<3800	<3600*F65
Pyrene, ug/kg dw	<3700	<370	<3800	<3600*F65
Benzidine, ug/kg dw	<31000	<3000	<31000	<29000*F65
Butylbenzylphthalate, ug/kg dw	<3700	<370	<3800	<3600*F65
bis(2-Ethylhexyl)phthalate, ug/kg dw	<3700	<370	<3800	<3600*F65
Chrysene, ug/kg dw	<3700	<370	<3800	<3600*F65
Benzo(a)anthracene, ug/kg dw	<3700	<370	<3800	<3600*F65
3,3'-Dichlorobenzidine, ug/kg dw	<7500	<730	<7700	<7200*F65
Di-n-octylphthalate, ug/kg dw	<3700	<370	<3800	<3600*F65
Benzo(b)fluoranthene, ug/kg dw	<3700	<370	<3800	<3600*F65
Benzo(k)fluoranthene, ug/kg dw	<3700	<370	<3800	<3600*F65
Benzo(a)pyrene, ug/kg dw	<3700	<370	<3800	<3600*F65
Indeno(1,2,3-cd)pyrene, ug/kg dw	<3700	<370	<3800	<3600*F65
Dibenzo(a,h)anthracene, ug/kg dw	<3700	<370	<3800	<3600*F65
Benzo(g,h,i)perylene, ug/kg dw	<3700	<370	<3800	<3600*F65

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Project: VST Site 250/Bravo Pier-Mayport
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REPORT OF RESULTS

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30774-3	0250-SS-GB01-0406	03-15-99/1150	TTN004
30774-4	0250-SS-GB02-0406	03-15-99/1245	TTN004
30774-5	0250-SS-GB03-0406	03-15-99/1305	TTN004
30774-6	0250-SS-GB04-0406	03-15-99/1405	TTN004

PARAMETER	30774-3	30774-4	30774-5	30774-6
N-Nitrosodimethylamine, ug/kg dw	<3700	<370	<3800	<3600*F65
2-Chlorophenol, ug/kg dw	<3700	<370	<3800	<3600*F65
2-Nitrophenol, ug/kg dw	<3700	<370	<3800	<3600*F65
Phenol, ug/kg dw	<3700	<370	<3800	<3600*F65
2,4-Dimethylphenol, ug/kg dw	<3700	<370	<3800	<3600*F65
2,4-Dichlorophenol, ug/kg dw	<3700	<370	<3800	<3600*F65
2,4,6-Trichlorophenol, ug/kg dw	<3700	<370	<3800	<3600*F65
4-Chloro-3-methylphenol, ug/kg dw	<3700	<370	<3800	<3600*F65
2,4-Dinitrophenol, ug/kg dw	<19000	<1900	<20000	<19000*F65
2-Methyl-4,6-dinitrophenol, ug/kg dw	<19000	<1900	<20000	<19000*F65
Pentachlorophenol, ug/kg dw	<19000	<1900	<20000	<19000*F65
4-Nitrophenol, ug/kg dw	<19000	<1900	<20000	<19000*F65
1,2-Diphenylhydrazine, ug/kg dw	<3700	<370	<3800	<3600*F65
Surrogate - 2-Fluorophenol	*F33	46 %	*F33	*F33
Surrogate - Phenol d5	*F33	49 %	*F33	*F33
Surrogate - Nitrobenzene - d5	*F33	45 %	*F33	*F33
Surrogate - 2-Fluorobiphenyl	*F33	47 %	*F33	*F33
Surrogate - 2,4,6-Tribromophenol	*F33	60 %	*F33	*F33
Surrogate - Terphenyl - d14	*F33	59 %	*F33	*F33
Prep Date	03.16.99	03.16.99	03.16.99	03.16.99
Analyst	PS	PS	PS	PS
Analysis Date	03.17.99	03.18.99	03.18.99	03.18.99
Batch ID	0316H	0316H	0316H	0316H
Dilution Factor	10	1.0	10	10
NIST Library Search (BN/A)	Attached	Attached	Attached	Attached

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Project: VST Site 250/Bravo Pier-Mayport
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Code: 175990319

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
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30774-4	0250-SS-GB02-0406	03-15-99/1245	TTN004
30774-5	0250-SS-GB03-0406	03-15-99/1305	TTN004
30774-6	0250-SS-GB04-0406	03-15-99/1405	TTN004

PARAMETER	30774-3	30774-4	30774-5	30774-6
Petroleum Range Organics (FL-PRO)				
Petroleum Hydrocarbons , mg/kg dw	5100	18	6500	6700
Surrogate, o-Terphenyl	*F33	43 %	*F33	*F33
Surrogate-C39	*F33	92 %	*F33	*F33
Prep Date	03.16.99	03.16.99	03.16.99	03.16.99
Analyst	BM	BM	BM	BM
Analysis Date	03.17.99	03.17.99	03.17.99	03.17.99
Batch ID	0316I	0316I	0316I	0316I
Dilution Factor	20	1.0	40	40
RCRA Metals (6010)				
Arsenic, mg/kg dw	<1.0	<1.0	<1.0	<1.0
Barium, mg/kg dw	9.1	5.4	7.0	1.5
Cadmium, mg/kg dw	<0.50	<0.50	<0.50	<0.50
Chromium, mg/kg dw	2.1	2.6	1.8	<1.0
Lead, mg/kg dw	4.4	7.2	1.1	1.3
Selenium, mg/kg dw	<1.0	<1.0	<1.0	<1.0
Silver, mg/kg dw	<1.0	<1.0	<1.0	<1.0
Prep Date	03.17.99	03.17.99	03.17.99	03.17.99
Analyst	CLD	CLD	CLD	CLD
Analysis Date	03.18.99	03.18.99	03.18.99	03.18.99
Batch ID	0317C	0317C	0317C	0317C
Dilution Factor	1.0	1.0	1.0	1.0

SL SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

2846 Industrial Plaza Drive (32301) • P.O. Box 13056 • Tallahassee, FL 32317-3056 • (850) 878-3994 • Fax (850) 878-9504

LOG NO: T9-30774
Received: 16 MAR 99
Reported: 19 MAR 99

Mr. Arnold Lamb, QA Officer
Tetra Tech NUS, Inc.
794 South Military Drive
Deerfield Beach, FL 33442

Client PO. No.: N7867-P99204(SS)

Project: VST Site 250/Bravo Pier-Mayport
Sampled By: RO
Code: 175990319

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
30774-3	0250-SS-GB01-0406	03-15-99/1150	TTN004
30774-4	0250-SS-GB02-0406	03-15-99/1245	TTN004
30774-5	0250-SS-GB03-0406	03-15-99/1305	TTN004
30774-6	0250-SS-GB04-0406	03-15-99/1405	TTN004

PARAMETER	30774-3	30774-4	30774-5	30774-6
Mercury (7471)				
Mercury, mg/kg dw	<0.020	<0.020	0.027	<0.020
Prep Date	03.17.99	03.17.99	03.17.99	03.17.99
Analyst	KW	KW	KW	KW
Analysis Date	03.17.99	03.17.99	03.17.99	03.17.99
Batch ID	0317R	0317R	0317R	0317R
Dilution Factor	1.0	1.0	1.0	1.0
TCLP extraction - non-volatile (1311)				
TCLP Extraction Date	03.16.99	03.16.99	03.16.99	03.16.99
Prep Date	03.16.99	03.16.99	03.16.99	03.16.99
Analyst	BP	BP	BP	BP
Batch ID	0316T	0316T	0316T	0316T
Metals in TCLP Extract (6010)				
Arsenic (TCLP-6010), mg/l	<0.20	<0.20	<0.20	<0.20
Barium (TCLP-6010), mg/l	<1.0	<1.0	<1.0	<1.0
Cadmium (TCLP-6010), mg/l	<0.10	<0.10	<0.10	<0.10
Chromium (TCLP-6010), mg/l	<0.20	<0.20	<0.20	<0.20
Lead (TCLP-6010), mg/l	<0.20	<0.20	<0.20	<0.20
Selenium (TCLP-6010), mg/l	<0.50	<0.50	<0.50	<0.50
Silver (TCLP-6010), mg/l	<0.10	<0.10	<0.10	<0.10
Prep Date	03.18.99	03.18.99	03.18.99	03.18.99
Analyst	DWH	DWH	DWH	DWH
Analysis Date	03.18.99	03.18.99	03.18.99	03.18.99
Batch ID	03180	03180	03180	03180
Dilution Factor	1.0	1.0	1.0	1.0

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LOG NO: T9-30774
Received: 16 MAR 99
Reported: 19 MAR 99

Mr. Arnold Lamb, QA Officer
Tetra Tech NUS, Inc.
794 South Military Drive
Deerfield Beach, FL 33442

Client PO. No.: N7867-P99204(SS)

Project: VST Site 250/Bravo Pier-Mayport
Sampled By: RO
Code: 182290319

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
30774-3	0250-SS-GB01-0406	03-15-99/1150	TTN004
30774-4	0250-SS-GB02-0406	03-15-99/1245	TTN004
30774-5	0250-SS-GB03-0406	03-15-99/1305	TTN004
30774-6	0250-SS-GB04-0406	03-15-99/1405	TTN004

PARAMETER	30774-3	30774-4	30774-5	30774-6
Mercury in TCLP Extract (7470)				
Mercury, mg/l	<0.020	<0.020	<0.020	<0.020
Prep Date	03.17.99	03.17.99	03.17.99	03.17.99
Analyst	KW	KW	KW	KW
Analysis Date	03.17.99	03.17.99	03.17.99	03.17.99
Batch ID	0317X	0317X	0317X	0317X
Dilution Factor	100	100	100	100
Percent Solids	87	94	82	93

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Mr. Arnold Lamb, QA Officer
Tetra Tech NUS, Inc.
794 South Military Drive
Deerfield Beach, FL 33442

Client PO. No.: N7867-P99204(SS)

Project: VST Site 250/Bravo Pier-Mayport
Sampled By: RO
Code: 182590322

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
30774-7	Method Blank		TTN004
30774-8	Lab Control Standard Result		TTN004
30774-9	Lab Control Standard Duplicate Result		TTN004
30774-10	Expected Value, LCS/LCSD		TTN004
30774-11	Lab Control Standard % Recovery		TTN004

PARAMETER	30774-7	30774-8	30774-9	30774-10	30774-11
Volatiles by GC/MS (8260)					
Benzene, ug/l	<1.0	9.41	9.40	10.0	94 %
Bromodichloromethane, ug/l	<1.0	---	---	---	---
Bromoform, ug/l	<1.0	---	---	---	---
Bromomethane, ug/l	<1.0	---	---	---	---
Carbon tetrachloride, ug/l	<1.0	---	---	---	---
Chlorobenzene, ug/l	<1.0	10.7	11.0	10.0	107 %
Chloroethane, ug/l	<1.0	---	---	---	---
Chloroform, ug/l	<1.0	---	---	---	---
Chloromethane, ug/l	<1.0	---	---	---	---
Dibromochloromethane, ug/l	<1.0	---	---	---	---
1,1-Dichloroethane, ug/l	<1.0	---	---	---	---
1,2-Dichloroethane, ug/l	<1.0	---	---	---	---
1,1-Dichloroethene, ug/l	<1.0	7.01	7.10	10.0	70 %
cis-1,2-Dichloroethene, ug/l	<1.0	---	---	---	---
trans-1,2-Dichloroethylene, ug/l	<1.0	---	---	---	---
cis-1,3-Dichloropropene, ug/l	<1.0	---	---	---	---
trans-1,3-Dichloropropene, ug/l	<1.0	---	---	---	---
Ethylbenzene, ug/l	<1.0	---	---	---	---
Methylene chloride (Dichloromethane), ug/l	<5.0	---	---	---	---
1,1,2,2-Tetrachloroethane, ug/l	<1.0	---	---	---	---

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Mr. Arnold Lamb, QA Officer
Tetra Tech NUS, Inc.
794 South Military Drive
Deerfield Beach, FL 33442

Client PO. No.: N7867-P99204(SS)

Project: VST Site 250/Bravo Pier-Mayport
Sampled By: RO
Code: 175990319

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
30774-7	Method Blank		TTN004
30774-8	Lab Control Standard Result		TTN004
30774-9	Lab Control Standard Duplicate Result		TTN004
30774-10	Expected Value, LCS/LCSD		TTN004
30774-11	Lab Control Standard % Recovery		TTN004

PARAMETER	30774-7	30774-8	30774-9	30774-10	30774-11
Volatiles by GC/MS (8260)					
Benzene, ug/l	<5.0	9.41	9.40	10.0	94 %
Bromodichloromethane, ug/l	<5.0	---	---	---	---
Bromoform, ug/l	<5.0	---	---	---	---
Bromomethane, ug/l	<10	---	---	---	---
Carbon tetrachloride, ug/l	<5.0	---	---	---	---
Chlorobenzene, ug/l	<5.0	10.7	11.0	10.0	107 %
Chloroethane, ug/l	<10	---	---	---	---
Chloroform, ug/l	<5.0	---	---	---	---
Chloromethane, ug/l	<10	---	---	---	---
Dibromochloromethane, ug/l	<5.0	---	---	---	---
1,1-Dichloroethane, ug/l	<5.0	---	---	---	---
1,2-Dichloroethane, ug/l	<5.0	---	---	---	---
1,1-Dichloroethene, ug/l	<5.0	7.01	7.10	10.0	70 %
cis-1,2-Dichloroethene, ug/l	<5.0	---	---	---	---
trans-1,2-Dichloroethylene, ug/l	<5.0	---	---	---	---
cis-1,3-Dichloropropene, ug/l	<5.0	---	---	---	---
trans-1,3-Dichloropropene, ug/l	<5.0	---	---	---	---
Ethylbenzene, ug/l	<5.0	---	---	---	---
Methylene chloride (Dichloromethane), ug/l	<5.0	---	---	---	---
1,1,2,2-Tetrachloroethane, ug/l	<5.0	---	---	---	---

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794 South Military Drive
Deerfield Beach, FL 33442

Client PO. No.: N7867-P99204(SS)

Project: VST Site 250/Bravo Pier-Mayport
Sampled By: RO
Code: 182590322

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
30774-7	Method Blank		TTN004
30774-8	Lab Control Standard Result		TTN004
30774-9	Lab Control Standard Duplicate Result		TTN004
30774-10	Expected Value, LCS/LCSD		TTN004
30774-11	Lab Control Standard % Recovery		TTN004

PARAMETER	30774-7	30774-8	30774-9	30774-10	30774-11
Tetrachloroethene, ug/l	<1.0	---	---	---	---
Toluene, ug/l	<1.0	9.82	9.63	10.0	98 %
1,1,1-Trichloroethane, ug/l	<1.0	---	---	---	---
1,1,2-Trichloroethane, ug/l	<1.0	---	---	---	---
Vinyl chloride, ug/l	<1.0	---	---	---	---
Surrogate - Toluene-d8	105 %	102 %	101 %	---	---
Surrogate - 4-Bromofluorobenzene	101 %	106 %	111 %	---	---
Surrogate - Dibromofluoromethane	119 %	118 %	115 %	---	---
2-Chloroethylvinyl Ether, ug/l	<10	---	---	---	---
Acrolein, ug/l	<20	---	---	---	---
Acrylonitrile, ug/l	<20	---	---	---	---
Xylenes, ug/l	<2.0	---	---	---	---
Methyl tert-butyl ether (MTBE), ug/l	<10	---	---	---	---
Trichloroethylene, %	---	11.2	11.3	10	112 %
Analyst	WHE	WHE	WHE	---	---
Analysis Date	03.17.99	03.16.99	03.16.99	---	---
Batch ID	0315N	0315M	0315M	---	---
Dilution Factor	1.0	1.0	1.0	---	---

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Client PO. No.: N7867-P99204(SS)

Project: VST Site 250/Bravo Pier-Mayport
Sampled By: RO
Code: 175990319

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
30774-7	Method Blank		TTN004
30774-8	Lab Control Standard Result		TTN004
30774-9	Lab Control Standard Duplicate Result		TTN004
30774-10	Expected Value, LCS/LCSD		TTN004
30774-11	Lab Control Standard % Recovery		TTN004

PARAMETER	30774-7	30774-8	30774-9	30774-10	30774-11
Semivolatile Organics (8270)					
1,3-Dichlorobenzene, ug/l	<10	---	---	---	---
1,4-Dichlorobenzene, ug/l	<10	23.0	25.5	50	46 %
Hexachloroethane, ug/l	<10	---	---	---	---
bis(2-Chloroethyl)ether, ug/l	<10	---	---	---	---
1,2-Dichlorobenzene, ug/l	<10	---	---	---	---
bis(2-Chloroisopropyl)ether, ug/l	<10	---	---	---	---
n-Nitrosodi-n-propylamine, ug/l	<10	31.5	33.8	50	63 %
Nitrobenzene, ug/l	<10	---	---	---	---
Hexachlorobutadiene, ug/l	<10	---	---	---	---
1,2,4-Trichlorobenzene, ug/l	<10	23.9	27.4	50	48 %
Isophorone, ug/l	<10	---	---	---	---
Naphthalene, ug/l	<10	---	---	---	---
bis(2-Chloroethoxy)methane, ug/l	<10	---	---	---	---
Hexachlorocyclopentadiene, ug/l	<10	---	---	---	---
2-Chloronaphthalene, ug/l	<10	---	---	---	---
Acenaphthylene, ug/l	<10	---	---	---	---
Acenaphthene, ug/l	<10	33.5	35.7	50	67 %
Dimethylphthalate, ug/l	<10	---	---	---	---
2,6-Dinitrotoluene, ug/l	<10	---	---	---	---
Fluorene, ug/l	<10	---	---	---	---
4-Chlorophenylphenyl ether, ug/l	<10	---	---	---	---

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30774-8	Lab Control Standard Result		TTN004
30774-9	Lab Control Standard Duplicate Result		TTN004
30774-10	Expected Value, LCS/LCSD		TTN004
30774-11	Lab Control Standard % Recovery		TTN004

PARAMETER	30774-7	30774-8	30774-9	30774-10	30774-11
2,4-Dinitrotoluene, ug/l	<10	32.2	34.4	50	64 %
Diethylphthalate, ug/l	<10	---	---	---	---
N-Nitrosodiphenylamine/Diphenylamine, ug/l	<10	---	---	---	---
Hexachlorobenzene, ug/l	<10	---	---	---	---
4-Bromophenyl phenyl ether, ug/l	<10	---	---	---	---
Phenanthrene, ug/l	<10	---	---	---	---
Anthracene, ug/l	<10	---	---	---	---
Di-n-butylphthalate, ug/l	<10	---	---	---	---
Fluoranthene, ug/l	<10	---	---	---	---
Pyrene, ug/l	<10	35.9	38.8	50	72 %
Benzidine, ug/l	<80	---	---	---	---
Butylbenzylphthalate, ug/l	<10	---	---	---	---
bis(2-Ethylhexyl)phthalate, ug/l	<10	---	---	---	---
Chrysene, ug/l	<10	---	---	---	---
Benzo(a)anthracene, ug/l	<10	---	---	---	---
3,3'-Dichlorobenzidine, ug/l	<20	---	---	---	---
Di-n-octylphthalate, ug/l	<10	---	---	---	---
Benzo(b)fluoranthene, ug/l	<10	---	---	---	---
Benzo(k)fluoranthene, ug/l	<10	---	---	---	---
Benzo(a)pyrene, ug/l	<10	---	---	---	---
Indeno(1,2,3-cd)pyrene, ug/l	<10	---	---	---	---

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Sampled By: RO
Code: 182590322

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
30774-7	Method Blank		TTN004
30774-8	Lab Control Standard Result		TTN004
30774-9	Lab Control Standard Duplicate Result		TTN004
30774-10	Expected Value, LCS/LCSD		TTN004
30774-11	Lab Control Standard % Recovery		TTN004

PARAMETER	30774-7	30774-8	30774-9	30774-10	30774-11
Dibenzo(a,h)anthracene, ug/l	<10	---	---	---	---
Benzo(g,h,i)perylene, ug/l	<10	---	---	---	---
N-Nitrosodimethylamine, ug/l	<10	---	---	---	---
2-Chlorophenol, ug/l	<10	64.2	69.2	100	64 %
2-Nitrophenol, ug/l	<10	---	---	---	---
Phenol, ug/l	<10	59.4	61.5	100	59 %
2,4-Dimethylphenol, ug/l	<10	---	---	---	---
2,4-Dichlorophenol, ug/l	<10	---	---	---	---
2,4,6-Trichlorophenol, ug/l	<10	---	---	---	---
4-Chloro-3-methylphenol, ug/l	<10	68.0	74.8	100	68 %
2,4-Dinitrophenol, ug/l	<50	---	---	---	---
2-Methyl-4,6-dinitrophenol, ug/l	<50	---	---	---	---
Pentachlorophenol, ug/l	<50	53.3	63.7	100	53 %
4-Nitrophenol, ug/l	<50	65.4	70.1	100	65 %
1,2-Diphenylhydrazine	<10	---	---	---	---
Surrogate - 2-Fluorophenol	63 %	67 %	72 %	---	---
Surrogate - Phenol d5	62 %	66 %	72 %	---	---
Surrogate - Nitrobenzene - d5	61 %	67 %	72 %	---	---
Surrogate - 2-Fluorobiphenyl	61 %	66 %	72 %	---	---
Surrogate - 2,4,6-Tribromophenol	69 %	77 %	80 %	---	---
Surrogate - Terphenyl - d14	70 %	74 %	79 %	---	---
Prep Date	03.16.99	03.16.99	03.16.99	---	---
Analyst	PS	PS	PS	---	---
Analysis Date	03.18.99	03.18.99	03.18.99	---	---
Batch ID	0316A	0316A	0316A	---	---
Dilution Factor	1.0	1.0	1.0	---	---

SAVANNAH LABORATORIES
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LOG NO: T9-30774
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Mr. Arnold Lamb, QA Officer
Tetra Tech NUS, Inc.
794 South Military Drive
Deerfield Beach, FL 33442

Client PO. No.: N7867-P99204(SS)

Project: VST Site 250/Bravo Pier-Mayport
Sampled By: RO
Code: 175990319

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
30774-7	Method Blank		TTN004
30774-8	Lab Control Standard Result		TTN004
30774-9	Lab Control Standard Duplicate Result		TTN004
30774-10	Expected Value, LCS/LCSD		TTN004
30774-11	Lab Control Standard % Recovery		TTN004

PARAMETER	30774-7	30774-8	30774-9	30774-10	30774-11
Petroleum Range Organics (FL-PRO)					
Petroleum Hydrocarbons , mg/l	<0.30	1.89	2.23	2.72	69 %
Surrogate, o-Terphenyl	56 %	46 %	56 %	---	---
Surrogate-C39	120 %	103 %	118 %	---	---
Prep Date	03.16.99	03.16.99	03.16.99	---	---
Analyst	BM	BM	BM	---	---
Analysis Date	03.17.99	03.17.99	03.17.99	---	---
Batch ID	0316D	0316D	0316D	---	---
Dilution Factor	1.0	1.0	1.0	---	---
RCRA Metals (6010)					
Arsenic, mg/l	<0.010	2.24	2.14	2.00	112 %
Barium, mg/l	<0.010	2.12	2.03	2.00	106 %
Cadmium, mg/l	<0.0050	2.20	2.12	2.00	110 %
Chromium, mg/l	<0.010	2.16	2.08	2.00	108 %
Lead, mg/l	<0.0050	2.20	2.13	2.00	110 %
Selenium, mg/l	<0.010	2.12	2.04	2.00	106 %
Silver, mg/l	<0.010	2.11	2.03	2.00	106 %
Prep Date	03.16.99	03.16.99	03.16.99	---	---
Analyst	CLD	CLD	CLD	---	---
Analysis Date	03.17.99	03.17.99	03.17.99	---	---
Batch ID	0316J	0316J	0316J	---	---
Dilution Factor	1.0	1.0	1.0	---	---

SL SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
30774-7	Method Blank		TTN004
30774-8	Lab Control Standard Result		TTN004
30774-9	Lab Control Standard Duplicate Result		TTN004
30774-10	Expected Value, LCS/LCSD		TTN004
30774-11	Lab Control Standard % Recovery		TTN004

PARAMETER	30774-7	30774-8	30774-9	30774-10	30774-11
Mercury (7470)					
Mercury, mg/l	<0.00020	0.00101	0.00101	0.00100	101 %
Prep Date	03.16.99	03.16.99	03.16.99	---	---
Analyst	KW	KW	KW	---	---
Analysis Date	03.17.99	03.17.99	03.17.99	---	---
Batch ID	0316U	0316U	0316U	---	---
Dilution Factor	1.0	1.0	1.0	---	---
Metals in TCLP Extract (6010)					
Arsenic (TCLP-6010), mg/l	<0.20	1.10	0.961	1.00	110 %
Barium (TCLP-6010), mg/l	<1.0	1.17	1.17	1.00	117 %
Cadmium (TCLP-6010), mg/l	<0.10	1.09	0.958	1.00	109 %
Chromium (TCLP-6010), mg/l	<0.20	1.02	1.04	1.00	102 %
Lead (TCLP-6010), mg/l	<0.20	1.06	0.926	1.00	106 %
Selenium (TCLP-6010), mg/l	<0.50	1.07	0.930	1.00	107 %
Silver (TCLP-6010), mg/l	<0.10	1.10	1.11	1.00	110 %
Prep Date	03.18.99	03.18.99	03.18.99	---	---
Analyst	DWH	DWH	DWH	---	---
Analysis Date	03.18.99	03.18.99	03.18.99	---	---
Batch ID	0318O	0318O	0318O	---	---
Dilution Factor	1.0	1.0	1.0	---	---

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LOG NO: T9-30774
Received: 16 MAR 99
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Mr. Arnold Lamb, QA Officer
Tetra Tech NUS, Inc.
794 South Military Drive
Deerfield Beach, FL 33442

Client PO. No.: N7867-P99204(SS)

Project: VST Site 250/Bravo Pier-Mayport
Sampled By: RO
Code: 175990319

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
30774-7	Method Blank		TTN004
30774-8	Lab Control Standard Result		TTN004
30774-9	Lab Control Standard Duplicate Result		TTN004
30774-10	Expected Value, LCS/LCSD		TTN004
30774-11	Lab Control Standard % Recovery		TTN004

PARAMETER	30774-7	30774-8	30774-9	30774-10	30774-11
Mercury in TCLP Extract (7470)					
Mercury, mg/l	<0.020	0.00199	0.00194	0.00200	100 %
Prep Date	03.17.99	03.17.99	03.17.99	---	---
Analyst	KW	KW	KW	---	---
Analysis Date	03.17.99	03.17.99	03.17.99	---	---
Batch ID	0317X	0317X	0317X	---	---
Dilution Factor	100	100	100	---	---

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794 South Military Drive
Deerfield Beach, FL 33442

Client PO. No.: N7867-P99204(SS)

Project: VST Site 250/Bravo Pier-Mayport
Sampled By: RO
Code: 185490319

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
30774-12	Lab Control Standard Duplicate % Recovery		TTN004
30774-13	Precision (%RPD) of LCS/LCSD		TTN004
30774-14	LCS Accuracy Control Limit (%R)		TTN004
30774-15	LCS Precision Control Limit (Advisory) %RPD		TTN004
30774-16	Control Limit Source		TTN004

PARAMETER	30774-12	30774-13	30774-14	30774-15	30774-16
Volatiles by GC/MS (8260)					
Benzene, %	110 %	0 %	52-134 %	<31 %	SL
Chlorobenzene, %	110 %	2.8 %	60-127 %	<25 %	SL
1,1-Dichloroethene, %	71 %	1.4 %	38-155 %	<25 %	SL
Toluene, %	96 %	1.0 %	76-128 %	<25 %	SL
Trichloroethylene, %	113 %	0.89 %	10-213 %	<40 %	SL
Surrogate - Toluene-d8	---	---	77-122 %	---	SL
Surrogate - 4-Bromofluorobenzene	---	---	74-126 %	---	SL
Surrogate - Dibromofluoromethane	---	---	70-130 %	---	SL
Analyst	WHE	WHE	WHE	---	---

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794 South Military Drive
Deerfield Beach, FL 33442

Client PO. No.: N7867-P99204(SS)

Project: VST Site 250/Bravo Pier-Mayport
Sampled By: RO
Code: 185690319

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
30774-12	Lab Control Standard Duplicate % Recovery		TTN004
30774-13	Precision (%RPD) of LCS/LCSD		TTN004
30774-14	LCS Accuracy Control Limit (%R)		TTN004
30774-15	LCS Precision Control Limit (Advisory) %RPD		TTN004
30774-16	Control Limit Source		TTN004

PARAMETER	30774-12	30774-13	30774-14	30774-15	30774-16
Semivolatile Organics (8270)					
1,4-Dichlorobenzene, %	51 %	10 %	27-103 %	<31 %	SL
n-Nitrosodi-n-propylamine, %	68 %	7.6 %	31-138 %	<30 %	SL
1,2,4-Trichlorobenzene, %	55 %	13 %	28-110 %	<28 %	SL
Acenaphthene, %	71 %	5.8 %	36-121 %	<35 %	SL
2,4-Dinitrotoluene, %	69 %	7.6 %	37-129 %	<32 %	SL
Pyrene, %	78 %	8.0 %	31-139 %	<42 %	SL
2-Chlorophenol, %	69 %	7.6 %	38-115 %	<34 %	SL
Phenol, %	62 %	5.0 %	33-122 %	<36 %	SL
4-Chloro-3-methylphenol, %	75 %	9.7 %	34-126 %	<31 %	SL
Pentachlorophenol, %	64 %	19 %	19-148 %	<33 %	SL
4-Nitrophenol, %	70 %	7.4 %	12-143 %	<44 %	SL
Surrogate - 2-Fluorophenol	---	---	29-121 %	---	SL
Surrogate - Phenol d5	---	---	25-128 %	---	SL
Surrogate - Nitrobenzene - d5	---	---	34-130 %	---	SL
Surrogate - 2-Fluorobiphenyl	---	---	36-124 %	---	SL
Surrogate - 2,4,6-Tribromophenol	---	---	29-143 %	---	SL
Surrogate - Terphenyl - d14	---	---	14-148 %	---	SL
Analyst	PS	PS	PS	---	---
Petroleum Range Organics (FL-PRO)					
Petroleum Hydrocarbons , %	82 %	17 %	41-101 %	<20 %	SL
Surrogate, o-Terphenyl	---	---	38-156 %	---	SL
Surrogate-C39	---	---	24-137 %	---	SL

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Mr. Arnold Lamb, QA Officer
Tetra Tech NUS, Inc.
794 South Military Drive
Deerfield Beach, FL 33442

Client PO. No.: N7867-P99204(SS)

Project: VST Site 250/Bravo Pier-Mayport
Sampled By: RO
Code: 185490319

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
30774-12	Lab Control Standard Duplicate % Recovery		TTN004
30774-13	Precision (%RPD) of LCS/LCSD		TTN004
30774-14	LCS Accuracy Control Limit (%R)		TTN004
30774-15	LCS Precision Control Limit (Advisory) %RPD		TTN004
30774-16	Control Limit Source		TTN004

PARAMETER	30774-12	30774-13	30774-14	30774-15	30774-16
RCRA Metals (6010)					
Arsenic, %	107 %	4.6 %	75-125 %	<20 %	SL
Barium, %	102 %	3.8 %	75-125 %	<20 %	SL
Cadmium, %	106 %	3.7 %	75-125 %	<20 %	SL
Chromium, %	104 %	3.8 %	75-125 %	<20 %	SL
Lead, %	106 %	3.7 %	75-125 %	<20 %	SL
Selenium, %	102 %	3.8 %	75-125 %	<20 %	SL
Silver, %	102 %	3.8 %	75-125 %	<20 %	SL
Analyst	CLD	CLD	CLD	---	---
Mercury (7470)					
Mercury, %	101 %	0 %	80-120 %	<20 %	SL
Analyst	KW	KW	KW	---	---
Metals in TCLP Extract (6010)					
Arsenic (TCLP-6010), %	96 %	14 %	75-125 %	<20 %	SL
Barium (TCLP-6010), %	117 %	0 %	75-125 %	<20 %	SL
Cadmium (TCLP-6010), %	96 %	13 %	75-125 %	<20 %	SL
Chromium (TCLP-6010), %	89 %	3.1 %	75-125 %	<20 %	SL
Lead (TCLP-6010), %	93 %	13 %	75-125 %	<20 %	SL
Selenium (TCLP-6010), %	93 %	14 %	75-125 %	<20 %	SL
Silver (TCLP-6010), %	111 %	0.90 %	75-125 %	<20 %	SL
Analyst	DWH	DWH	DWH	---	---
Mercury in TCLP Extract (7470)					
Mercury, %	97 %	3.0 %	80-120 %	<20 %	SL
Analyst	KW	KW	KW	---	---

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Client PO. No.: N7867-P99204(SS)

Project: VST Site 250/Bravo Pier-Mayport
Sampled By: RO
Code: 185490319

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR SOLID/SEMISOLID	DATE/ TIME SAMPLED	SDG#
30774-17	Method Blank		TTN004
30774-18	Lab Control Standard Result		TTN004
30774-19	Lab Control Standard Duplicate Result		TTN004
30774-20	Expected Value, LCS/LCSD		TTN004
30774-21	Lab Control Standard % Recovery		TTN004

PARAMETER	30774-17	30774-18	30774-19	30774-20	30774-21
Volatiles by GC/MS (8260)					
Benzene, ug/kg dw	<5.0	41.9	41.3	50.0	84 %
Bromodichloromethane, ug/kg dw	<5.0	---	---	---	---
Bromoform, ug/kg dw	<5.0	---	---	---	---
Carbon tetrachloride, ug/kg dw	<5.0	---	---	---	---
Chlorobenzene, ug/kg dw	<5.0	42.2	43.1	50.0	84 %
Chloroethane, ug/kg dw	<10	---	---	---	---
Chloroform, ug/kg dw	<5.0	---	---	---	---
Chloromethane, ug/kg dw	<10	---	---	---	---
Dibromochloromethane, ug/kg dw	<10	---	---	---	---
1,1-Dichloroethane, ug/kg dw	<5.0	---	---	---	---
1,2-Dichloroethane, ug/kg dw	<5.0	---	---	---	---
1,1-Dichloroethene, ug/kg dw	<5.0	34.6	33.6	50.0	69 %
trans-1,2-Dichloroethylene, ug/kg dw	<5.0	---	---	---	---
1,2-Dichloropropane, ug/kg dw	<5.0	---	---	---	---
cis-1,3-Dichloropropene, ug/kg dw	<5.0	---	---	---	---
trans-1,3-Dichloropropene, ug/kg dw	<5.0	---	---	---	---
Ethylbenzene, ug/kg dw	<5.0	---	---	---	---
Methylene chloride (Dichloromethane), ug/kg dw	<5.0	---	---	---	---

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Client PO. No.: N7867-P99204(SS)

Project: VST Site 250/Bravo Pier-Mayport
Sampled By: RO
Code: 182590322
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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR SOLID/SEMISOLID	DATE/ TIME SAMPLED	SDG#
30774-17	Method Blank		TTN004
30774-18	Lab Control Standard Result		TTN004
30774-19	Lab Control Standard Duplicate Result		TTN004
30774-20	Expected Value, LCS/LCSD		TTN004
30774-21	Lab Control Standard % Recovery		TTN004

PARAMETER	30774-17	30774-18	30774-19	30774-20	30774-21
1,1,2,2-Tetrachloroethane, ug/kg dw	<5.0	---	---	---	---
Tetrachloroethene, ug/kg dw	<5.0	---	---	---	---
Toluene, ug/kg dw	<5.0	41.2	40.4	50.0	82 %
1,1,1-Trichloroethane, ug/kg dw	<5.0	---	---	---	---
1,1,2-Trichloroethane, ug/kg dw	<5.0	---	---	---	---
Trichloroethylene, ug/kg dw	<5.0	46.4	45.6	50.0	93 %
Vinyl chloride, ug/kg dw	<10	---	---	---	---
Surrogate - Toluene-d8	96 %	102 %	102 %	---	---
Surrogate - 4-Bromofluorobenzene	104 %	103 %	104 %	---	---
Surrogate - Dibromofluoromethane	118 %	122 %	126 %	---	---
2-Chloroethylvinyl Ether, ug/kg dw	<50	---	---	---	---
Acrolein, ug/kg dw	<100	---	---	---	---
Acrylonitrile, ug/kg dw	<100	---	---	---	---
Xylenes, ug/kg dw	<5.0	---	---	---	---
Methyl tert-butyl ether (MTBE), ug/kg dw	<50	---	---	---	---
Analyst	WHE	WHE	WHE	---	---
Analysis Date	03.18.99	03.16.99	03.18.99	---	---
Batch ID	0315N	0315N	0315N	---	---
Dilution Factor	1.0	1.0	1.0	---	---

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Project: VST Site 250/Bravo Pier-Mayport
Sampled By: RO
Code: 185490319

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR SOLID/SEMISOLID	DATE/ TIME SAMPLED	SDG#
30774-17	Method Blank		TTN004
30774-18	Lab Control Standard Result		TTN004
30774-19	Lab Control Standard Duplicate Result		TTN004
30774-20	Expected Value, LCS/LCSD		TTN004
30774-21	Lab Control Standard % Recovery		TTN004

PARAMETER	30774-17	30774-18	30774-19	30774-20	30774-21
Semivolatile Organics (8270)					
1,3-Dichlorobenzene, ug/kg dw	<330	---	---	---	---
1,4-Dichlorobenzene, ug/kg dw	<330	990	947	1670	59 %
Hexachloroethane, ug/kg dw	<330	---	---	---	---
bis(2-Chloroethyl)ether, ug/kg dw	<330	---	---	---	---
1,2-Dichlorobenzene, ug/kg dw	<330	---	---	---	---
bis(2-Chloroisopropyl)ether , ug/kg dw	<330	---	---	---	---
n-Nitrosodi-n-propylamine, ug/kg dw	<330	928	943	1670	56 %
Nitrobenzene, ug/kg dw	<330	---	---	---	---
Hexachlorobutadiene, ug/kg dw	<330	---	---	---	---
1,2,4-Trichlorobenzene, ug/kg dw	<330	1040	1000	1670	62 %
Isophorone, ug/kg dw	<330	---	---	---	---
Naphthalene, ug/kg dw	<330	---	---	---	---
bis(2-Chloroethoxy)methane, ug/kg dw	<330	---	---	---	---
Hexachlorocyclopentadiene, ug/kg dw	<330	---	---	---	---
2-Chloronaphthalene, ug/kg dw	<330	---	---	---	---
Acenaphthylene, ug/kg dw	<330	---	---	---	---
Acenaphthene, ug/kg dw	<330	1160	1100	1670	69 %

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REPORT OF RESULTS

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30774-17	Method Blank		TTN004
30774-18	Lab Control Standard Result		TTN004
30774-19	Lab Control Standard Duplicate Result		TTN004
30774-20	Expected Value, LCS/LCSD		TTN004
30774-21	Lab Control Standard % Recovery		TTN004

PARAMETER	30774-17	30774-18	30774-19	30774-20	30774-21
Dimethylphthalate, ug/kg dw	<330	---	---	---	---
2,6-Dinitrotoluene, ug/kg dw	<330	---	---	---	---
Fluorene, ug/kg dw	<330	---	---	---	---
4-Chlorophenylphenyl ether, ug/kg dw	<330	---	---	---	---
2,4-Dinitrotoluene, ug/kg dw	<330	1050	990	1670	63 %
Diethylphthalate, ug/kg dw	<330	---	---	---	---
N-Nitrosodiphenylamine/Diphenylamine, ug/kg dw	<330	---	---	---	---
Hexachlorobenzene, ug/kg dw	<330	---	---	---	---
4-Bromophenyl phenyl ether, ug/kg dw	<330	---	---	---	---
Phenanthrene, ug/kg dw	<330	---	---	---	---
Anthracene, ug/kg dw	<330	---	---	---	---
Di-n-butylphthalate, ug/kg dw	<330	---	---	---	---
Fluoranthene, ug/kg dw	<330	---	---	---	---
Pyrene, ug/kg dw	<330	1250	1220	1670	75 %
Benzidine, ug/kg dw	<2700	---	---	---	---
Butylbenzylphthalate, ug/kg dw	<330	---	---	---	---
bis(2-Ethylhexyl)phthalate, ug/kg dw	<330	---	---	---	---
Chrysene, ug/kg dw	<330	---	---	---	---

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR SOLID/SEMISOLID	DATE/ TIME SAMPLED	SDG#
30774-17	Method Blank		TTN004
30774-18	Lab Control Standard Result		TTN004
30774-19	Lab Control Standard Duplicate Result		TTN004
30774-20	Expected Value, LCS/LCSD		TTN004
30774-21	Lab Control Standard % Recovery		TTN004

PARAMETER	30774-17	30774-18	30774-19	30774-20	30774-21
Benzo(a)anthracene, ug/kg dw	<330	---	---	---	---
3,3'-Dichlorobenzidine, ug/kg dw	<660	---	---	---	---
Di-n-octylphthalate, ug/kg dw	<330	---	---	---	---
Benzo(b)fluoranthene, ug/kg dw	<330	---	---	---	---
Benzo(k)fluoranthene, ug/kg dw	<330	---	---	---	---
Benzo(a)pyrene, ug/kg dw	<330	---	---	---	---
Indeno(1,2,3-cd)pyrene, ug/kg dw	<330	---	---	---	---
Dibenzo(a,h)anthracene, ug/kg dw	<330	---	---	---	---
Benzo(g,h,i)perylene, ug/kg dw	<330	---	---	---	---
N-Nitrosodimethylamine, ug/kg dw	<330	---	---	---	---
2-Chlorophenol, ug/kg dw	<330	2110	1990	3330	63 %
2-Nitrophenol, ug/kg dw	<330	---	---	---	---
Phenol, ug/kg dw	<330	1950	1880	3330	59 %
2,4-Dimethylphenol, ug/kg dw	<330	---	---	---	---
2,4-Dichlorophenol, ug/kg dw	<330	---	---	---	---
2,4,6-Trichlorophenol, ug/kg dw	<330	---	---	---	---
4-Chloro-3-methylphenol, ug/kg dw	<330	2210	2290	3330	66 %
2,4-Dinitrophenol, ug/kg dw	<1700	---	---	---	---
2-Methyl-4,6-dinitrophenol, ug/kg dw	<1700	---	---	---	---
Pentachlorophenol, ug/kg dw	<1700	1860	1750	3330	56 %
4-Nitrophenol, ug/kg dw	<1700	2170	2090	3330	65 %

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Project: VST Site 250/Bravo Pier-Mayport
Sampled By: RO
Code: 182590322

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR SOLID/SEMISOLID	DATE/ TIME SAMPLED	SDG#
30774-17	Method Blank		TTN004
30774-18	Lab Control Standard Result		TTN004
30774-19	Lab Control Standard Duplicate Result		TTN004
30774-20	Expected Value, LCS/LCSD		TTN004
30774-21	Lab Control Standard % Recovery		TTN004

PARAMETER	30774-17	30774-18	30774-19	30774-20	30774-21
1,2-Diphenylhydrazine, ug/kg dw	<330	---	---	---	---
Surrogate - 2-Fluorophenol	72 %	66 %	64 %	---	---
Surrogate - Phenol d5	71 %	65 %	62 %	---	---
Surrogate - Nitrobenzene - d5	70 %	62 %	61 %	---	---
Surrogate - 2-Fluorobiphenyl	73 %	71 %	68 %	---	---
Surrogate - 2,4,6-Tribromophenol	77 %	75 %	69 %	---	---
Surrogate - Terphenyl - d14	87 %	78 %	75 %	---	---
Prep Date	03.16.99	03.16.99	03.16.99	---	---
Analyst	PS	PS	PS	---	---
Analysis Date	03.18.99	03.18.99	03.18.99	---	---
Batch ID	0316H	0316H	0316H	---	---
Dilution Factor	1.0	1.0	1.0	---	---
Petroleum Range Organics (FL-PRO)					
Petroleum Hydrocarbons , mg/kg dw	<10	46.3	46.0	90.7	51 %
Surrogate, o-Terphenyl	37 %	34 %	35 %	---	---
Surrogate-C39	89 %	66 %	58 %	---	---
Prep Date	03.16.99	03.16.99	03.16.99	---	---
Analyst	BM	BM	BM	---	---
Analysis Date	03.17.99	03.17.99	03.17.99	---	---
Batch ID	0316I	0316I	0316I	---	---
Dilution Factor	1.0	1.0	1.0	---	---

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LOG NO: T9-30774
Received: 16 MAR 99
Reported: 19 MAR 99

Mr. Arnold Lamb, QA Officer
Tetra Tech NUS, Inc.
794 South Military Drive
Deerfield Beach, FL 33442

Client PO. No.: N7867-P99204(SS)

Project: VST Site 250/Bravo Pier-Mayport
Sampled By: RO
Code: 185490319

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR SOLID/SEMISOLID	DATE/ TIME SAMPLED	SDG#
30774-17	Method Blank		TTN004
30774-18	Lab Control Standard Result		TTN004
30774-19	Lab Control Standard Duplicate Result		TTN004
30774-20	Expected Value, LCS/LCSD		TTN004
30774-21	Lab Control Standard % Recovery		TTN004

PARAMETER	30774-17	30774-18	30774-19	30774-20	30774-21
RCRA Metals (6010)					
Arsenic, mg/kg dw	<1.0	203	204	2.00	102 %
Barium, mg/kg dw	<1.0	200	208	2.00	100 %
Cadmium, mg/kg dw	<0.50	203	205	2.00	102 %
Chromium, mg/kg dw	<1.0	204	204	2.00	102 %
Lead, mg/kg dw	<0.50	202	204	2.00	101 %
Selenium, mg/kg dw	<1.0	188	191	2.00	94 %
Silver, mg/kg dw	<1.0	4.11	4.23	5.00	82 %
Prep Date	03.17.99	03.17.99	03.17.99	---	---
Analyst	CLD	CLD	CLD	---	---
Analysis Date	03.18.99	03.18.99	03.18.99	---	---
Batch ID	0317C	0317C	0317C	---	---
Dilution Factor	1.0	1.0	1.0	---	---
Mercury (7471)					
Mercury, mg/kg dw	<0.020	0.0494	0.0494	0.0500	99 %
Prep Date	03.17.99	03.17.99	03.17.99	---	---
Analyst	KW	KW	KW	---	---
Analysis Date	03.17.99	03.17.99	03.17.99	---	---
Batch ID	0317R	0317R	0317R	---	---
Dilution Factor	1.0	1.0	1.0	---	---

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Mr. Arnold Lamb, QA Officer
Tetra Tech NUS, Inc.
794 South Military Drive
Deerfield Beach, FL 33442

Client PO. No.: N7867-P99204(SS)

Project: VST Site 250/Bravo Pier-Mayport
Sampled By: RO
Code: 185490319

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR SOLID/SEMISOLID	DATE/ TIME SAMPLED	SDG#
30774-17	Method Blank		TTN004
30774-18	Lab Control Standard Result		TTN004
30774-19	Lab Control Standard Duplicate Result		TTN004
30774-20	Expected Value, LCS/LCSD		TTN004
30774-21	Lab Control Standard % Recovery		TTN004

PARAMETER	30774-17	30774-18	30774-19	30774-20	30774-21
Metals in TCLP Extract (6010)					
Arsenic (TCLP-6010), mg/l	<0.20	1.10	0.961	1.00	110 %
Barium (TCLP-6010), mg/l	<1.0	1.17	1.17	1.00	117 %
Cadmium (TCLP-6010), mg/l	<0.10	1.09	0.958	1.00	109 %
Chromium (TCLP-6010), mg/l	<0.20	1.02	1.04	1.00	102 %
Lead (TCLP-6010), mg/l	<0.20	1.06	0.926	1.00	106 %
Selenium (TCLP-6010), mg/l	<0.50	1.07	0.930	1.00	107 %
Silver (TCLP-6010), mg/l	<0.10	1.10	1.11	1.00	110 %
Prep Date	03.18.99	03.18.99	03.18.99	---	---
Analyst	DWH	DWH	DWH	---	---
Analysis Date	03.18.99	03.18.99	03.18.99	---	---
Batch ID	03180	03180	03180	---	---
Dilution Factor	1.0	1.0	1.0	---	---
Mercury in TCLP Extract (7470)					
Mercury, mg/l	<0.020	0.00199	0.00194	0.00200	100 %
Prep Date	03.17.99	03.17.99	03.17.99	---	---
Analyst	KW	KW	KW	---	---
Analysis Date	03.17.99	03.17.99	03.17.99	---	---
Batch ID	0317X	0317X	0317X	---	---
Dilution Factor	100	100	100	---	---

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LOG NO: T9-30774
Received: 16 MAR 99
Reported: 19 MAR 99

Mr. Arnold Lamb, QA Officer
Tetra Tech NUS, Inc.
794 South Military Drive
Deerfield Beach, FL 33442

Client PO. No.: N7867-P99204(SS)

Project: VST Site 250/Bravo Pier-Mayport
Sampled By: RO
Code: 190090319

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR SOLID/SEMISOLID	DATE/ TIME SAMPLED	SDG#
30774-22	Lab Control Standard Duplicate % Recovery		TTN004
30774-23	Precision (%RPD) of LCS/LCSD		TTN004
30774-24	LCS Accuracy Control Limit (%R)		TTN004
30774-25	LCS Precision Control Limit (Advisory) %RPD		TTN004
30774-26	Control Limit Source		TTN004

PARAMETER	30774-22	30774-23	30774-24	30774-25	30774-26
Volatiles by GC/MS (8260)					
Benzene, %	82 %	2.4 %	64-144 %	<25 %	SL
Chlorobenzene, %	86 %	2.4 %	56-152 %	<25 %	SL
1,1-Dichloroethene, %	67 %	2.9 %	44-157 %	<23 %	SL
Toluene, %	81 %	2.4 %	67-142 %	<25 %	SL
Trichloroethylene, %	91 %	2.2 %	41-134 $	<25 %	SL
Surrogate - Toluene-d8	---	---	64-136 %	---	SL
Surrogate - 4-Bromofluorobenzene	---	---	63-135 %	---	SL
Surrogate - Dibromofluoromethane	---	---	58-142 %	---	SL
Analyst	WHE	WHE	WHE	---	---

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794 South Military Drive
Deerfield Beach, FL 33442

Client PO. No.: N7867-P99204(SS)

Project: VST Site 250/Bravo Pier-Mayport
Sampled By: RO
Code: 185490319

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR SOLID/SEMISOLID	DATE/ TIME SAMPLED	SDG#
30774-22	Lab Control Standard Duplicate % Recovery		TTN004
30774-23	Precision (%RPD) of LCS/LCSD		TTN004
30774-24	LCS Accuracy Control Limit (%R)		TTN004
30774-25	LCS Precision Control Limit (Advisory) %RPD		TTN004
30774-26	Control Limit Source		TTN004

PARAMETER	30774-22	30774-23	30774-24	30774-25	30774-26
Semivolatile Organics (8270)					
1,4-Dichlorobenzene, %	57 %	3.4 %	10-1-5 %	<31 %	SL
n-Nitrosodi-n-propylamine, %	56 %	0 %	11-122 %	<37 %	SL
1,2,4-Trichlorobenzene, %	60 %	3.3 %	10-112 %	<22 %	SL
Acenaphthene, %	66 %	4.4 %	18-123 %	<49 %	SL
2,4-Dinitrotoluene, %	59 %	6.6 %	15-118 %	<57 %	SL
Pyrene, %	73 %	2.7 %	10-133 %	<42 %	SL
2-Chlorophenol, %	60 %	4.8 %	15-111 %	<38 %	SL
Phenol, %	56 %	5.2 %	13-115 %	<39 %	SL
4-Chloro-3-methylphenol, %	69 %	4.4 %	24-114 %	<32 %	SL
Pentachlorophenol, %	53 %	5.6 %	10-140 %	<55 %	SL
4-Nitrophenol, %	63 %	3.1 %	15-118 %	<57 %	SL
Surrogate - 2-Fluorophenol	---	---	16-113 %	---	SL
Surrogate - Phenol d5	---	---	19-114 %	---	SL
Surrogate - Nitrobenzene - d5	---	---	20-106 %	---	SL
Surrogate - 2-Fluorobiphenyl	---	---	30-105 %	---	SL
Surrogate - 2,4,6-Tribromophenol	---	---	23-129 %	---	SL
Surrogate - Terphenyl - d14	---	---	30-131 %	---	SL
Analyst	PS	PS	PS	---	---
Petroleum Range Organics (FL-PRO)					
Petroleum Hydrocarbons , %	51 %	0 %	26-116 %	<25 %	SL
Surrogate, o-Terphenyl	---	---	15-154 %	---	SL
Surrogate-C39	---	---	30-118 %	---	SL

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LOG NO: T9-30774
Received: 16 MAR 99
Reported: 19 MAR 99

Mr. Arnold Lamb, QA Officer
Tetra Tech NUS, Inc.
794 South Military Drive
Deerfield Beach, FL 33442

Client PO. No.: N7867-P99204(SS)

Project: VST Site 250/Bravo Pier-Mayport
Sampled By: RO
Code: 185490319

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR SOLID/SEMISOLID	DATE/ TIME SAMPLED	SDG#
30774-22	Lab Control Standard Duplicate % Recovery		TTN004
30774-23	Precision (%RPD) of LCS/LCSD		TTN004
30774-24	LCS Accuracy Control Limit (%R)		TTN004
30774-25	LCS Precision Control Limit (Advisory) %RPD		TTN004
30774-26	Control Limit Source		TTN004

PARAMETER	30774-22	30774-23	30774-24	30774-25	30774-26
RCRA Metals (6010)					
Arsenic, %	102 %	0 %	75-125 %	<20 %	SL
Barium, %	104 %	3.9 %	75-125 %	<20 %	SL
Cadmium, %	102 %	0 %	75-125 %	<20 %	SL
Chromium, %	102 %	0 %	75-125 %	<20 %	SL
Lead, %	102 %	0.99 %	75-125 %	<20 %	SL
Selenium, %	96 %	2.1 %	75-125 %	<20 %	SL
Silver, %	85 %	3.6 %	75-125 %	<20 %	SL
Analyst	CLD	CLD	CLD	---	---
Mercury (7471)					
Mercury, %	99 %	1.0 %	75-125 %	<20 %	SL
Analyst	---	KW	KW	---	---
Metals in TCLP Extract (6010)					
Arsenic (TCLP-6010), %	96 %	14 %	75-125 %	<20 %	SL
Barium (TCLP-6010), %	117 %	0 %	75-125 %	<20 %	SL
Cadmium (TCLP-6010), %	96 %	13 %	75-125 %	<20 %	SL
Chromium (TCLP-6010), %	89 %	3.1 %	75-125 %	<20 %	SL
Lead (TCLP-6010), %	93 %	13 %	75-125 %	<20 %	SL
Selenium (TCLP-6010), %	93 %	14 %	75-125 %	<20 %	SL
Silver (TCLP-6010), %	111 %	0.90 %	75-125 %	<20 %	SL
Analyst	DWH	DWH	DWH	---	---
Mercury in TCLP Extract (7470)					
Mercury, %	97 %	3.0 %	80-120 %	<20 %	SL
Analyst	KW	KW	KW	---	---

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LOG NO: T9-30774
Received: 16 MAR 99
Reported: 19 MAR 99

Mr. Arnold Lamb, QA Officer
Tetra Tech NUS, Inc.
794 South Military Drive
Deerfield Beach, FL 33442

Client PO. No.: N7867-P99204(SS)

Project: VST Site 250/Bravo Pier-Mayport
Sampled By: RO
Code: 182590322

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR SOLID/SEMISOLID	DATE/ TIME SAMPLED	SDG#
30774-22	Lab Control Standard Duplicate % Recovery		TTN004
30774-23	Precision (%RPD) of LCS/LCSD		TTN004
30774-24	LCS Accuracy Control Limit (%R)		TTN004
30774-25	LCS Precision Control Limit (Advisory) %RPD		TTN004
30774-26	Control Limit Source		TTN004

PARAMETER	30774-22	30774-23	30774-24	30774-25	30774-26

Method: EPA SW-846
Florida Dept. of Health Certification No.: E81005
FDEP CompQAP No.: 890142G

*F33 Control limits are established only for surrogate concentration levels specified by EPA methods. Because the sample was diluted prior to analysis, surrogate recoveries are not reported.

*F36 Surrogate recovery was outside established limits due to a coeluting matrix interference in the sample.

*F65 Elevated detection limit was reported due to sample matrix interference which required sample or extract dilution.

*J The flag 'J' indicates the presence of a compound that meets the identification criteria, but the result is less than the RL and greater than the MDL.

Laura B. Snead

Laura B. Snead, Project Manager

Final Page Of Report

Semivolatile TICs

CLIENT: TETRA TECH NUV, INC. PROJECT: 2900083

LOG NUMBER: T930774-1 SAMPLE DESCRIPTION: GW-GB01

MATRIX: LIQUID

CAS#	Compound	Est
1.	UNKNOWN	8 ug/L
2.	UNKNOWN ALKYLATED BENZENE	13 ug/L
3. 119642	NAPHTHALENE, 1,2,3,4-TETRAHYDRO-	6 ug/L
4.	UNKNOWN TETRAHYDRO METHYL NAPHTHALENE ISOMER	10 ug/L
5.	UNKNOWN TETRAHYDRO METHYL NAPHTHALENE ISOMER	7 ug/L
6. 91576	2-METHYLNAPHTHALENE	20 ug/L
7. 264095	1-METHYLNAPHTHALENE	6 ug/L
8.	UNKNOWN ETHYL NAPHTHALENE ISOMER	9 ug/L
9.	UNKNOWN DIMETHYL NAPHTHALENE ISOMER	16 ug/L
10.	UNKNOWN DIMETHYL NAPHTHALENE ISOMER	21 ug/L
11.	UNKNOWN ALKANE	7 ug/L
12.	UNKNOWN	9 ug/L
13.	UNKNOWN ALKYLATED NAPHTHALENE	8 ug/L
14.	UNKNOWN TRIMETHYL NAPHTHLENE ISOMER	7 ug/L
15.	UNKNOWN TRIMETHYL NAPHTHLENE ISOMER	8 ug/L
16.	UNKNOWN	18 ug/L
17.	UNKNOWN HYDROCARBON	16 ug/L
18.	UNKNOWN ALKYLATED BENZENE	5 ug/L
19.	UNKNOWN	5 ug/L
20.		

Tentatively Identified Compounds (TICs) are identified by comparison of the spectrum of an unknown peak to mass spectra stored in the National Institute of Standard and Technology (NIST) library. The reported concentration is semi-quantitative and based on the response factor of the internal standards added to the sample immediately before GC/MS analysis.

Semivolatile TICs

CLIENT: TETRA TECH NUV, INC. PROJECT: 2900083

LOG NUMBER: T930774-4 SAMPLE DESCRIPTION: SS-GB02

MATRIX: SOIL

CAS#	Compound	Est
1.	UNKNOWN	150 ug/Kg dw
2.	UNKNOWN	470 ug/Kg dw
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		
17.		
18.		
19.		
20.		

Tentatively Identified Compounds (TICs) are identified by comparison of the spectrum of an unknown peak to mass spectra stored in the National Institute of Standard and Technology (NIST) library. The reported concentration is semi-quantitative and based on the response factor of the internal standards added to the sample immediately before GC/MS analysis.

Semivolatile TICs

CLIENT: TETRA TECH NUV, INC. PROJECT: 2900083

LOG NUMBER: T930774-3 SAMPLE DESCRIPTION: SS-GB01

MATRIX: SOIL

CAS#	Compound	Est
1.	UNKNOWN ALKYLATED BENZENE	6300 ug/Kg dw
2.	UNKNOWN HYDROCARBON	8900 ug/Kg dw
3.	UNKNOWN	6500 ug/Kg dw
4.	UNKNOWN HYDROCARBON	8900 ug/Kg dw
5.	UNKNOWN	6500 ug/Kg dw
6.	UNKNOWN HYDROCARBON	19,000 ug/Kg dw
7.	UNKNOWN	8800 ug/Kg dw
8. 91576	2-METHYLNAPHTHALENE	7400 ug/Kg dw
9.	UNKNOWN	18,000 ug/Kg dw
10.	UNKNOWN HYDROCARBON	16,000 ug/Kg dw
11.	UNKNOWN DIMETHYL NAPHTHALENE ISOMER	12,000 ug/Kg dw
12.	UNKNOWN DIMETHYL NAPHTHALENE ISOMER	13,000 ug/Kg dw
13.	UNKNOWN DIMETHYL NAPHTHALENE ISOMER	15,000 ug/Kg dw
14.	UNKNOWN HYDROCARBON	25,000 ug/Kg dw
15.	UNKNOWN HYDROCARBON	11,000 ug/Kg dw
16.	UNKNOWN ALKYLATED NAPHTHALENE	12,000 ug/Kg dw
17.	UNKNOWN TRIMETHYL NAPHTHALENE ISOMER	11,000 ug/Kg dw
18.	UNKNOWN TRIMETHYL NAPHTHALENE ISOMER	22,000 ug/Kg dw
19.	UNKNOWN TRIMETHYL NAPHTHALENE ISOMER	12,000 ug/Kg dw
20.	UNKNOWN HYDROCARBON	16,000 ug/Kg dw

Tentatively Identified Compounds (TICs) are identified by comparison of the spectrum of an unknown peak to mass spectra stored in the National Institute of Standard and Technology (NIST) library. The reported concentration is semi-quantitative and based on the response factor of the internal standards added to the sample immediately before GC/MS analysis.

Volatile TICs

CLIENT: Tetra Tech NUS

PROJECT: Bravo Pier-Mayport

LOG NUMBER: T930774-3

SAMPLE DESCRIPTION: 0250-SS-GB01

MATRIX: soil

CAS#	Compound	Estimated Concentration
1. 527537	1,2,3,4-tetramethylbenzene	7900 ug/kg_dw
2. 16526902	cis-bicyclo[5.1.0]octane	9700 ug/kg_dw
3. 99876	1-methyl-4-(1-methylethyl)-benzene	8400 ug/kg_dw
4. 119642	1,2,3,4-tetrahydronaphthalene	8400 ug/kg_dw
5. 4912929	2,3-dihydro-1,1-dimethyl-1H-indene	12000 ug/kg_dw
6. 1680519	1,2,3,4-tetrahydro-6-methyl-naphthalene	20000 ug/kg_dw
7. 2809645	1,2,3,4-tettahydro-5-methyl-naphthalene	18000 ug/kg_dw
8. 2471832	1-ethylidene-1H-indene	14000 ug/kg_dw
9.		
10.		

------>>>>> No additional TICs detected or searched. <<<<<------

Tentatively Identified Compounds (TICs) are identified by comparison of the spectrum of an unknown peak to mass spectra stored in the National Institute of Standard and Technology (NIST) library. The reported concentration is semi-quantitative and based on the response factor of the internal standards added to the sample immediately before GC/MS analysis.

Volatile TICs

CLIENT: Tetra Tech NUS

PROJECT: Bravo Pier-Mayport

LOG NUMBER: T930774-4

SAMPLE DESCRIPTION: 0250-SS-GB02

MATRIX: soil

CAS#	Compound	Estimated Concentration
1.	No compounds were detected which met	
2.	the criteria for identification and	
3.	quantitation as tentatively identified	
4.	compounds.	
5.		
6.		
7.		
8.		
9.		
10.		

------>>>>> No additional TICs detected or searched. <<<<<------

Tentatively Identified Compounds (TICs) are identified by comparison of the spectrum of an unknown peak to mass spectra stored in the National Institute of Standard and Technology (NIST) library. The reported concentration is semi-quantitative and based on the response factor of the internal standards added to the sample immediately before GC/MS analysis.

Volatile TICs

CLIENT: Tetra Tech NUS PROJECT: Bravo Pier-Mayport

LOG NUMBER: T930774-5 SAMPLE DESCRIPTION: 0250-SS-GB03

MATRIX: soil

CAS#	Compound	Estimated Concentration
1. 50746537	1-methyl-2-(2-propenyl)-transcyclopentane	34000 ug/kg_dw
2. 527537	1,2,3,4-tetramethylbenzene	22000 ug/kg_dw
3. 99876	1-methyl-4-(1-methylethyl)-benzene	89000 ug/kg_dw
4. 119642	1,2,3,4-tetrahydronaphthalene	38000 ug/kg_dw
5. 4912929	2,3-dihydro-1,1-dimethyl-1H-indene	34000 ug/kg_dw
6. 16805191	1,2,3,4-tetrahydro-6-methyl-naphthalene	53000 ug/kg_dw
7. 2809645	1,2,3,4-tetrahydro-5-methyl-naphthalene	41000 ug/kg_dw
8. 4453901	1,4-dihydro-1,4-methanonaphthalene	60000 ug/kg_dw
9.		
10.		

------>>>>> No additional TICs detected or searched. <<<<<------

Tentatively Identified Compounds (TICs) are identified by comparison of the ectrum of an unknown peak to mass spectra stored in the National Institute Standard and Technology (NIST) library. The reported concentration is mi-quantitative and based on the response factor of the internal standards ided to the sample immediately before GC/MS analysis.

Volatile TICs

CLIENT: Tetra Tech NUS PROJECT: Bravo Pier-Mayport

LOG NUMBER: T930774-6 SAMPLE DESCRIPTION: 0250-SS-GB04

MATRIX: soil

CAS#	Compound	Estimated Concentration
1.	unknown	84000 ug/kg_dw
2.	unknown	760 ug/kg_dw
3.	unknown	650 ug/kg_dw
4.	unknown	1300 ug/kg_dw
5. 2808755	1-methyl-2-methylenecyclohexane	540 ug/kg_dw
6. 21370661	trans-bicyclo[5.1.0]octane	3100 ug/kg_dw
7. 14138	decahydro-2,6-dimethylnaphthalene	2700 ug/kg_dw
8. 4453901	1,4-dihydro-1,4-methanonaphthalene	1900 ug/kg_dw
9.		
10.		

------>>>>> No additional TICs detected or searched. <<<<<------

Tentatively Identified Compounds (TICs) are identified by comparison of the spectrum of an unknown peak to mass spectra stored in the National Institute of Standard and Technology (NIST) library. The reported concentration is semi-quantitative and based on the response factor of the internal standards added to the sample immediately before GC/MS analysis.

APPENDIX D

LETTER REPORT AND FIELD NOTES (PWC, 1999)

Building 250
Mayport Florida
29 August – 8 September 99

PWC JAX Points of Contact
Mr. Jeff Ward, PWC JAX Laboratory, SCAPS liaison
Mr. Jose Deliz, PWC JAX site project manager for bldg's 250 & 285

12 Sept 1999

Enclosures: **(1) Site Map**
(2) LIF push files
(3) Spectral plot sheet

Field Notes:
Building 250

1.0 **Sunday,** 29 August 1999: SCAPS crew and equipment departed PWC Norfolk, arrived Mayport Naval Station same day.

2.0 **Monday,** 30 August 1999: Field crew set up site at building 250 in accordance with PWC site representative Mr. Jeff Ward. Mr. Ward described the boundaries of the site in accordance with the requirements of Mr. Jose Deliz. The footprint of the site covers the area from the NE and SE corners of building 234, extending directly across to the pier side fence.

2.1 SCAPS was required to push 20 LIF pushes within the defined area of the described site in an effort to identify the optimum soil sampling locations.

2.2 Utilities were cleared by the host activity, under the direction of PWC JAX.

2.3 SCAPS personnel began to establish the grid for the LIF pushes. Approx. 15 push locations were initially cleared.

2.4 An initial LIF push was conducted to within approx. 2 feet of an existing temporary monitoring well. Mr. Ward described that the well had been installed and samples taken which helped identify the existence of fuel product in the groundwater table. The LIF location is marked as "Well Push". The well was sounded using an electronic measuring device; Depth To Groundwater (DTW) was recorded to be 4.95^{ft} BGS.

Review of the LIF data collected from this location gave a representative depiction of the "spectral" signal and the approx. intensity of return signal for a known high concentration of soil/groundwater contamination. Subsequent LIF data would be compared to this "well" data for the purposes of determining possible false positives.

2.5 LIF data was collected at the following locations on Monday:

Location	*Depth of "eye"*	*Comment*
1) well push	**13.8ft**	**Positive detect: 175K @ 4.5 BGS**
2) 006	8.57ft	Non-detect: False positive
3) 001	8.77ft	Possible detection. Very low intensity
4) 005	**10.81ft**	**Positive detect: 185K @ 4.9 BGS**
5) 016	10.74ft	Non-detect
6) 007	11.64ft	Non-detect
7) 009	7.93ft	Non-detect: False positive

* The "eye" is the spot where laser light and return energy occur on the probe.

2.6 Two hydraulic lines broke at the completion of the LIF push at location #-006. The approx. down time was 3 hours. No data was lost. Repairs, site and equipment clean up were completed by SCAPS personnel.

3.0 **Tuesday,** 31 August 1999: Completed site set up including the clearing of push locations and, resumed collecting LIF data.

Location	*Depth*	*Comment*
1) 017	8.80ft	Non-detect
2) 010	Refusal	Concrete under asphalt
3) 013	8.71ft	Non-detect
4) 013	3.5-5.36ft	Soil sample: PID=0
5) 013	5.36-7.14ft	Soil sample: PID=0
6) 004	10.31ft	Non-detect
7) 011	10.28ft	Non-detect
8) 020	**6.73ft**	**Positive detect: 26,300 @ 5.0 BGS**
9) 021	6.18ft	Non-detect: False positive
10) 019	7.15ft	Non-detect: False positive
11) 020	**4.0-5.5ft**	**Soil sample: High odor some staining, head space analysis using PID : #1 jar = 50ppm, #2 jar = 52ppm.**
12) 018	9.49ft	Non-detect: False positive

3.1 Initial field results indicated contamination was evident along the NW corner of the UST site, extending out towards building 234. No contamination was identified around any of the other 3 side of where the UST(s) once existed.

3.2 A new series of pushes was established. Push locations previously cleared and numbered, but not yet pushed, were left untouched. Newly identified locations were numbered with the next available numbers ie. Push locations –022 through –028.

3.3 New push locations were located to within close proximity to the three locations with known contamination, "well push", -005 and –020.

4.0 **Wednesday,** 01 September 1999: Cleared remaining new push locations, and the collection of remaining LIF data. Surveyed all push locations and significant features of site using GPS. Completed elevation survey of site to establish groundwater levels across the site.

4.1 Over the past two days the SCAPS crew had inquired into the history of the UST(s) which were removed from the site. The data being acquired indicated that the contamination was following a linear track. The suspected reasoning was that a utility conduit or duct bank (abandoned or active) which was acting as the transmitter of the fuel. No evidence other than the LIF data indicated this was the case. Two utility lines do cross the site, almost perpendicular to the direction of the contamination. One line is a sewage line the other was unidentified. The approx. depth of the utility lines is commensurate with the depth to groundwater and the existing contamination.

4.2 LIF data collected:

Location	***Depth***	***Comment***
1) 021	3.5-5^{ft}	Soil sample: Non detect PID=0
2) 024	7.06	Non-detect
3) 025	8.23^{ft}	Non-detect
4) 023	9.32^{ft}	Non-detect
5) 026	**7.16^{ft}**	**Positive detect: 130K @ 3.5 BGS**
6) 027	6.79^{ft}	Non-detect. False positive
7) 028	6.54^{ft}	Non-detect
8) B-1	0-2^{ft}	Soil sample
9) B-2	2-4^{ft}	Soil sample
10) B-3	4-6^{ft}	Soil sample
11) A-1	0-2^{ft}	Soil sample
12) A-2	2-4^{ft}	Soil sample
13) A-3	4-6^{ft}	Soil sample
14) D-1	0-2^{ft}	Soil sample
15) D-2	2-4^{ft}	Soil sample
16) D-3	4-6^{ft}	Soil sample
17) C-1	0-2^{ft}	Soil sample
18) C-2	2-4^{ft}	Soil sample
19) C-3	4-6^{ft}	Soil sample
16) E-1	0-2^{ft}	Soil sample
17) E-2	2-4^{ft}	Soil sample
18) E-3	4-6^{ft}	Soil sample

4.3 LIF push –026 identified significant contamination however, the depth of highest response was approx. 1.5^{ft} above the water table as well as the response detected in the adjacent location of the existing monitoring well.

Finding:

1.0 The objective of the project was to use LIF data to identify the optimum soil sample locations on the site. Since the contamination was located in such a narrow area and since the contamination was observed to diminish to zero only a few feet from known "hot" spots, the ability to optimize the locations for taking soil samples became a complicated task.

1.1 Totals:

Description	***#***	***Comments***
LIF pushes	20	
Refusal pushes	1	Encountered concrete under asphalt. No indication contamination extended to this Point, the push was aborted.
Confirmation soil Samples	4	Location –013 (2) samples, both non-detect Location –020 sample had 50/52 ppm, & heavy odor Location –021 sample was non-detect

Description	***#***	***Comments***
Soil samples For analysis by PWC JAX	14	
DTW	N/A	Sounded existing well over the course of the project to Establish existing groundwater level, 4.97ft BGS.

2.0 The determination of groundwater elevations for certain locations provided important information with regard to depth of contamination. The following diagram depicts the results of the elevation survey.

* Groundwater elevation was established using the DTW measured from the existing well (top of PVC), it was determined to be 4.95' BGS. Then the top of the PVC was surveyed via the level to obtain the DTW to be 9.76.

Location	**-005**	**-020**	**-026**	**-006**	**-009**
Datum "H" of survey level	5.68'	5.93'	5.57'	6.08'	5.71'
Depth to GW =	4.08'	3.83'	4.19'	3.68'	4.05'
Groundwater DTW from survey level = 9.76 for the Purpose of this survey					

2.1 Depth to groundwater has been transcribed on the LIF push files provided with this letter. Note, the contamination exists below the water table at locations –005, and -020, and above the GW in –026. The false positives detected in locations –006 and –009 were observed below the water table.

2.2 Analysis of the samples revealed a layer of soil below the water table which had small inner-bedded shells. LIF has been known to cause fluorescence of calcium based material such as shells. This material is the most probable cause of the false positive readings observed.

Location	Sample Interval	Sample ID #
B-1	0-2	No sample taken. Sampler tip did not release.
B-2	2-4	99FY01722
B-3	4-6	99FY01723
A-1	1.5-2	99FY01724
A-2	2-4	99FY01725
A-3	4-6	99FY01726
D-1	1.5-2	99FY01727
D-2	2-4	99FY01728
D-3	4-6	99FY01729
C-1	1.5-2	99FY01730
C-2	2-4	99FY01731
C-3	4-6	99FY01732
E-1	0-2	99FY01733
E-2	2-4	99FY01734
E-3	4-6	99FY01735

* Locations A-1, C-1 and D-1 were pre-punched prior to advancing the sampler downhole.

2.3 The attached spectral plots, enclosure (3), for locations –005, -009, -024, -025 and -027 was put together to help demonstrate the identification of the false positive contacts observed in certain locations.

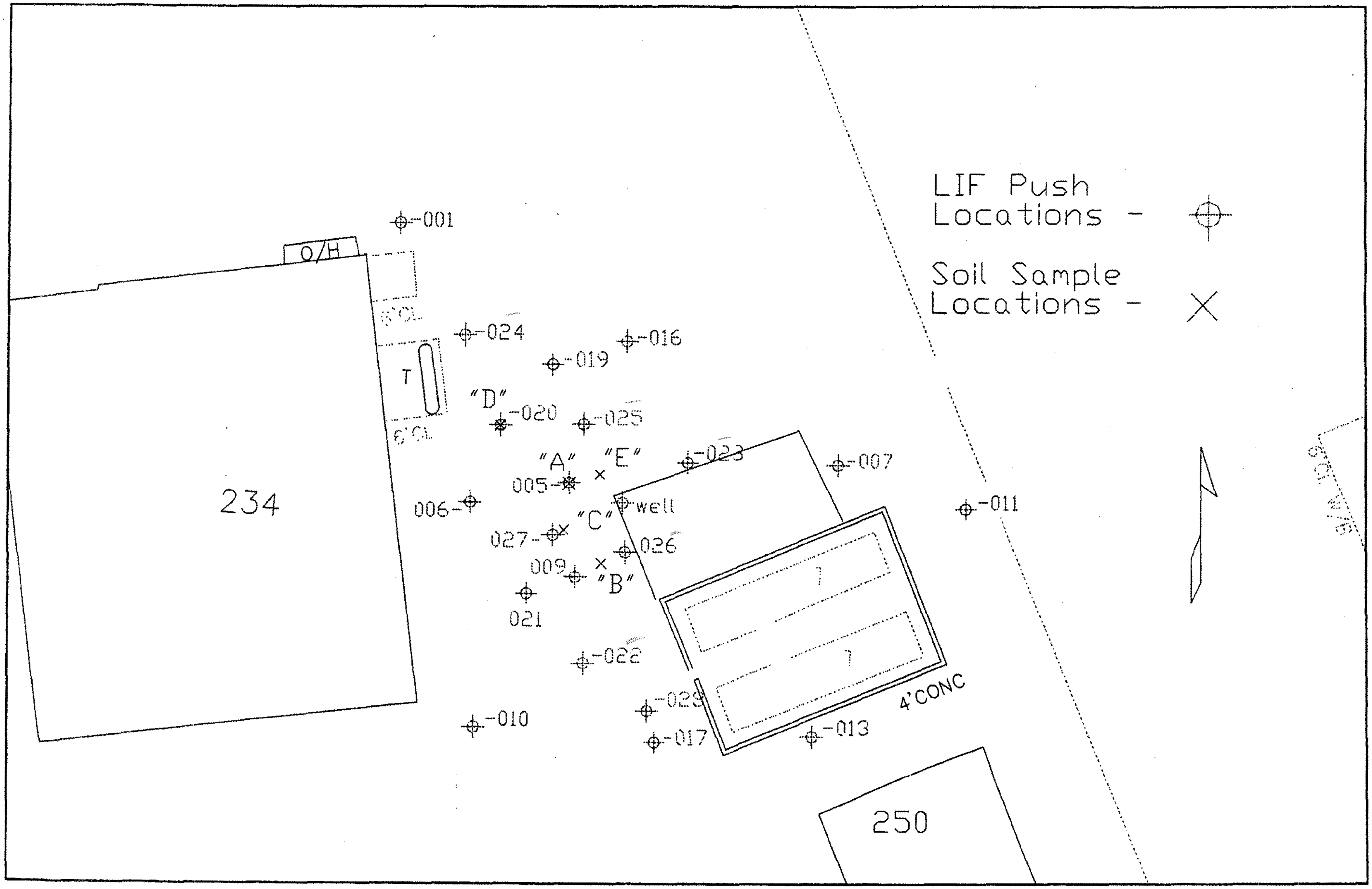
Push location –009 represents the best example of the false positive LIF data observed on this project. The relative intensity goes up at a depth commensurate with the occurrence of the groundwater table. However, when these spectral plots are reviewed beside the known fuel spetra, the difference in fluorescence shapes is observed. Locations –021 and –013 both had similar spectral plots as the other false positive locations. Confirmation samples were collected at these locations since their peak intensities were significant enough to indicate the presence of contamination may exist. No contamination was detected or observed when the samples were collected and field tested.

2.4 Since the SCAPS data identified such a narrow alley where the contamination appeared to exists, there was concern that the inherent errors in the GPS data provided, would make it difficult to be a stand alone survey. The field crew measured the site using a nylon survey tape. The relative distances between push locations which are known to have contamination and the outlining clean LIF and sample locations is provided in the table below:

Distances measured in feet-inches

Location	-006	-009	019	-020	-023	-024	-025	-027	"C"	"E"
-015		20'-1"		38'-9"	19'-9"			20'-4"	17'-4-3/4"	14'-2-1/2"
-020	19'-5-1/2"		19'-4"			21'-7"	20'-6"			
"A"	24'-5"					19'-11"	13'-4"	14'-5"	13'-3"	8'-0"

2.5 The information contained in this document is provided to assist the project managers, customers, in determining the approximate locations of subsurface contamination. The PWC JAX laboratory is processing the soil samples.



NS MAYPORT, FL - SITE 250 SCAPS INVESTIGATION 99-004

Columbia Analytical Services Inc.
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July 15, 1999

Service Request No. J9902009

Jeff Ward
Navy Public Works Center
Attn: Environmental Lab
Jacksonville, FL. 32212

Certification Numbers:	
Florida DEP:	930298G
Florida HRS:	E82502; 82483
Massachusetts:	M-FL937
New Hampshire:	294297-A; 294297-B
North Carolina:	527
South Carolina:	96021001
A2LA	0490-02

RE: Project No.: 90234(Impac)
Project Name: Mayport Bldg 250

Dear Jeff Ward:

Enclosed are the results of the samples(s) submitted to our laboratory on July 13, 1999. For your reference, these analyses have been assigned our service request number: J9902009.

All analyses were performed according to our laboratory's quality assurance program. All results are intended to be considered in the entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the samples analyzed.

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

Tom Kissinger

Tom Kissinger
Project Chemist

TK/jg

8540 Baycenter Rd. ▪ Jacksonville, FL 32256 ▪ (904) 739-2277 ▪ Fax (904) 739-2011

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Navy Public Works Center
Project: PWC Jax / 90327 (Impac)
Sample Matrix: Soil

Service Request: J9902630
Date Collected: 9/1/99
Date Received: 9/2/99

Diesel Range Organics (DRO)

Prep Method: EPA 3550B
Analysis Method: 8015M
Test Notes:

Units: mg/Kg (ppm)
Basis: Dry

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
99FY01722	J9902630-001	10	4	1	9/7/99	9/8/99	200	
99FY01723	J9902630-002	20	4	2	9/7/99	9/8/99	980	
99FY01724	J9902630-003	100	4	10	9/7/99	9/8/99	3000	
99FY01725	J9902630-004	200	4	20	9/7/99	9/8/99	6900	
99FY01726	J9902630-005	200	4	20	9/7/99	9/8/99	8900	
99FY01727	J9902630-006	10	4	1	9/7/99	9/8/99	U	
99FY01728	J9902630-007	10	4	1	9/7/99	9/8/99	U	
99FY01729	J9902630-008	10	4	1	9/7/99	9/8/99	240	
99FY01730	J9902630-009	10	4	1	9/7/99	9/8/99	U	
99FY01731	J9902630-010	10	4	1	9/7/99	9/8/99	U	
99FY01732	J9902630-011	10	4	1	9/7/99	9/8/99	U	
99FY01733	J9902630-012	10	4	1	9/7/99	9/8/99	U	
99FY01734	J9902630-013	10	4	1	9/7/99	9/8/99	U	
99FY01735	J9902630-014	10	4	1	9/7/99	9/8/99	U	
Method Blank	J990907-MB	10	4	1	9/7/99	9/8/99	U	
Lab Control Sample	J990907-LCS	10	4	1	9/7/99	9/8/99	U	
Batch QC	J9902568-007MS	10	4	1	9/7/99	9/8/99	U	
Batch QC	J9902568-007DMS	10	4	1	9/7/99	9/8/99	U	

Approved By: Tom D. Kissinger Date: 9/16/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Navy Public Works Center	**Service Request:**	J9902630
Project:	PWC Jax / 90327 (Impac)	**Date Collected:**	9/1/99
Sample Matrix:	Soil	**Date Received:**	9/2/99

Inorganic Parameters

Sample Name: 99FY01722
Lab Code: J9902630-01
Test Notes:

Basis: DRY

Analyte	**Units**	**Analysis Method**	**MRL**	**MDL**	**Dilution Factor**	**Date Extracted**	**Date Analyzed**	**Result**	**Result Notes**
Solids, Total	PERCENT	160.3	10	10	1	9/3/99	9/3/99	93.9	

Approved By: Tom D. Kissinger Date: 9/16/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Navy Public Works Center	**Service Request:**	J9902630
Project:	PWC Jax / 90327 (Impac)	**Date Collected:**	9/1/99
Sample Matrix:	Soil	**Date Received:**	9/2/99

Inorganic Parameters

Sample Name: 99FY01723
Lab Code: J9902630-02
Test Notes:

Basis: DRY

Analyte	Units	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Solids, Total	PERCENT	160.3	10	10	1	9/3/99	9/3/99	83.9	

Approved By: Tom D. Kissinger Date: 9/16/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Navy Public Works Center
Project: PWC Jax / 90327 (Impac)
Sample Matrix: Soil

Service Request: J9902630
Date Collected: 9/1/99
Date Received: 9/2/99

Inorganic Parameters

Sample Name: 99FY01724
Lab Code: J9902630-03
Test Notes:

Basis: DRY

Analyte	Units	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Solids, Total	PERCENT	160.3	10	10	1	9/3/99	9/3/99	95.6	

Approved By: Tom D. Wissing Date: 9/16/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Navy Public Works Center	**Service Request:**	J9902630
Project:	PWC Jax / 90327 (Impac)	**Date Collected:**	9/1/99
Sample Matrix:	Soil	**Date Received:**	9/2/99

Inorganic Parameters

Sample Name: 99FY01725
Lab Code: J9902630-04
Test Notes:

Basis: DRY

Analyte	Units	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Solids, Total	PERCENT	160.3	10	10	1	9/3/99	9/3/99	92.9	

Approved By: Tami D. Kissinger Date: 9/16/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Navy Public Works Center	**Service Request:**	J9902630
Project:	PWC Jax / 90327 (Impac)	**Date Collected:**	9/1/99
Sample Matrix:	Soil	**Date Received:**	9/2/99

Inorganic Parameters

Sample Name: 99FY01726
Lab Code: J9902630-05
Test Notes:

Basis: DRY

Analyte	Units	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Solids, Total	PERCENT	160.3	10	10	1	9/3/99	9/3/99	80.3	

Approved By: Tom D. Ussinger Date: 9/16/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Navy Public Works Center	**Service Request:**	J9902630
Project:	PWC Jax / 90327 (Impac)	**Date Collected:**	9/1/99
Sample Matrix:	Soil	**Date Received:**	9/2/99

Inorganic Parameters

Sample Name: 99FY01727
Lab Code: J9902630-06
Basis: DRY
Test Notes:

Analyte	**Units**	**Analysis Method**	**MRL**	**MDL**	**Dilution Factor**	**Date Extracted**	**Date Analyzed**	**Result**	**Result Notes**
Solids, Total	PERCENT	160.3	10	10	1	9/3/99	9/3/99	96.1	

Approved By: Tom D. Kissinger Date: 9/16/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Navy Public Works Center	**Service Request:**	J9902630
Project:	PWC Jax / 90327 (Impac)	**Date Collected:**	9/1/99
Sample Matrix:	Soil	**Date Received:**	9/2/99

Inorganic Parameters

Sample Name: 99FY01728
Lab Code: J9902630-07
Test Notes:

Basis: DRY

Analyte	Units	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Solids, Total	PERCENT	160.3	10	10	1	9/3/99	9/3/99	85.2	

Approved By: Tom D. Vissering Date: 9/16/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Navy Public Works Center	**Service Request:**	J9902630
Project:	PWC Jax / 90327 (Impac)	**Date Collected:**	9/1/99
Sample Matrix:	Soil	**Date Received:**	9/2/99

Inorganic Parameters

Sample Name: 99FY01729
Lab Code: J9902630-08
Test Notes:

Basis: DRY

Analyte	Units	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Solids, Total	PERCENT	160.3	10	10	1	9/3/99	9/3/99	80.6	

Approved By: Tom D. Kissinger Date: 9/16/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Navy Public Works Center	**Service Request:**	J9902630
Project:	PWC Jax / 90327 (Impac)	**Date Collected:**	9/1/99
Sample Matrix:	Soil	**Date Received:**	9/2/99

Inorganic Parameters

Sample Name: 99FY01730
Lab Code: J9902630-09
Test Notes:

Basis: DRY

Analyte	Units	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Solids, Total	PERCENT	160.3	10	10	1	9/3/99	9/3/99	94.4	

Approved By: Tom D. Kissinger Date: 9/16/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Navy Public Works Center	**Service Request:**	J9902630
Project:	PWC Jax / 90327 (Impac)	**Date Collected:**	9/1/99
Sample Matrix:	Soil	**Date Received:**	9/2/99

Inorganic Parameters

Sample Name: 99FY01731
Lab Code: J9902630-10
Test Notes:

Basis: DRY

Analyte	**Units**	**Analysis Method**	**MRL**	**MDL**	**Dilution Factor**	**Date Extracted**	**Date Analyzed**	**Result**	**Result Notes**
Solids, Total	PERCENT	160.3	10	10	1	9/3/99	9/3/99	86	

Approved By: Tom D. Kissinger Date: 9/16/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Navy Public Works Center
Project: PWC Jax / 90327 (Impac)
Sample Matrix: Soil

Service Request: J9902630
Date Collected: 9/1/99
Date Received: 9/2/99

Inorganic Parameters

Sample Name: 99FY01732
Lab Code: J9902630-11
Test Notes:

Basis: DRY

Analyte	Units	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Solids, Total	PERCENT	160.3	10	10	1	9/3/99	9/3/99	80.9	

Approved By: Tom D. Kissinger Date: 9/16/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Navy Public Works Center	**Service Request:**	J9902630
Project:	PWC Jax / 90327 (Impac)	**Date Collected:**	9/1/99
Sample Matrix:	Soil	**Date Received:**	9/2/99

Inorganic Parameters

Sample Name: 99FY01733
Lab Code: J9902630-12
Basis: DRY
Test Notes:

Analyte	Units	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Solids, Total	PERCENT	160.3	10	10	1	9/3/99	9/3/99	94.5	

Approved By: Tom D. Kissinger Date: 9/16/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Navy Public Works Center	**Service Request:**	J9902630
Project:	PWC Jax / 90327 (Impac)	**Date Collected:**	9/1/99
Sample Matrix:	Soil	**Date Received:**	9/2/99

Inorganic Parameters

Sample Name: 99FY01734
Lab Code: J9902630-13
Test Notes:

Basis: DRY

Analyte	Units	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Solids, Total	PERCENT	160.3	10	10	1	9/3/99	9/3/99	73.3	

Approved By: Tami D. Ursing Date: 9/16/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Navy Public Works Center	**Service Request:**	J9902630
Project:	PWC Jax / 90327 (Impac)	**Date Collected:**	9/1/99
Sample Matrix:	Soil	**Date Received:**	9/2/99

Inorganic Parameters

Sample Name: 99FY01735
Lab Code: J9902630-14
Test Notes:

Basis: DRY

Analyte	Units	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Solids, Total	PERCENT	160.3	10	10	1	9/3/99	9/3/99	71.5	

Approved By: Tom D. Kissinger Date: 9/16/99

Columbia Analytical Services INC.
An Employee-Owned Company

CHAIN OF CUSTODY/LABORATORY ANALYSIS REPORT FORM

8540 Baycenter Rd. • Jacksonville, FL 32256 • (904) 739-2277 • 800-695-7222 • FAX (904) 739-2011

DATE ______ PAGE ______ OF ______

PROJECT NAME 90327
PROJECT #
COMPANY/ADDRESS PWC JAX
PHONE 771-3461
REPORT TO: JEFF WARD

ANALYSIS REQUEST: 8015M DRO

SAMPLE I.D.	DATE	TIME	SAMPLE MATRIX	NUMBER OF CONTAINERS	8015M DRO	REMARKS
99FY01722	9-1-99	1410		1	X	B-2
99FY01723	" "	1420		1	X	B-3
99FY01724	" "	1443		1	X	A-1
99FY01725	" "	1453		1	X	A-2
99FY01726	" "	1505		1	X	A-3
99FY01727	" "	1525		1	X	D-1
99FY01728	" "	1535		1	X	D-2
99FY01729	" "	1545		1	X	D-3
99FY01730	" "	1605		1	X	C-1
99FY01731	" "	1610		1	X	C-2

RELINQUISHED BY:
Signature: Pete Long
Printed Name: Pete Long
Firm: PWC Norfolk
Date/Time

RECEIVED BY:
Signature: José R. Deliz
Printed Name: José R. Deliz
Firm: PWC Jax
Date/Time

TURNAROUND REQUIREMENTS
___ 24 hr. ___ 48 hr. ___ 5 day
___ Standard (7-10 working days)
___ Provide Verbal Preliminary Results
___ Provide FAX Preliminary Results
Requested Report Date ______

REPORT REQUIREMENTS
___ I. Routine Report
___ II. Report (includes DUP.MAS. MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ IV. CLP Deliverable Report

INVOICE INFORMATION:
P.O.# ______
Bill To ______

SAMPLE RECEIPT:
Shipping VIA: ______
Shipping to: ______
Condition: ______
Lab No: ______

RELINQUISHED BY:
Signature: José R. Deliz
Printed Name: José R. Deliz
Firm: PWC JAX
Date/Time: 9/2/99 @ 1247

RECEIVED BY:
Signature: Jeffrey S. Ward
Printed Name: JEFFREY S. WARD
Firm: PWC
Date/Time: 9/2/99 @ 1247

SPECIAL INSTRUCTIONS/COMMENTS:
Relinquished by Jeff S. Ward PWC
rec'd By
[illegible] PWC 9-02-99 1348
[illegible] CAS 9-02-99 1440
Paul [illegible] CAS

SAMPLER'S SIGNATURE

J9902630

DISTRIBUTION: WHITE - return to originator; YELLOW - lab; PINK - retained by originator

Columbia Analytical Services INC.
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DATE ________ PAGE ________ OF ________

PROJECT NAME 90327

PROJECT #

COMPANY/ADDRESS PWC JAX

PHONE 771-3461

REPORT TO: JEFF WARD

ANALYSIS REQUEST: (8015M) DRO

SAMPLE I.D.	DATE	TIME	SAMPLE MATRIX	NUMBER OF CONTAINERS	(8015M) DRO	REMARKS
99FY01732	9-1-99	1620		1	X	C-3
99FY01733	9-1-99	1640		1	X	E-1
99FY01734	9-1-99	1645		1	X	E-2
99FY01735	9-1-99	1650		1	X	E-3

RELINQUISHED BY:
Signature: Pete Lang
Printed Name: Pete Lang
Firm: PWC Norfolk
Date/Time

RECEIVED BY:
Signature: Jose R. Deliz
Printed Name: Jose R. Deliz
Firm: PWC Jax
Date/Time

RELINQUISHED BY:
Signature: Jose R. Deliz
Printed Name: Jose R. Deliz
Firm: PWC Jax
Date/Time: 9/2/99 @ 1248

RECEIVED BY:
Signature
Printed Name: Jeff Ward
Firm: PWC
Date/Time: 9/2/99 @ 1248

TURNAROUND REQUIREMENTS
___ 24 hr. ___ 48 hr. ___ 5 day
___ Standard (7-10 working days)
___ Provide Verbal Preliminary Results
___ Provide FAX Preliminary Results
Requested Report Date ________

REPORT REQUIREMENTS
___ I. Routine Report
___ II. Report (includes DUP.MAS. MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ IV. CLP Deliverable Report

INVOICE INFORMATION:
P.O.# ________
Bill To ________

SAMPLE RECEIPT:
Shipping VIA: ________
Shipping to: ________
Condition: ________
Lab No: ________

SPECIAL INSTRUCTIONS/COMMENTS:
Relinquished By
Jeff Ward
Received By
Van Hutch PWC 9-02-99 1740
Van Hutch CAS 9-02-99 1240
Paul Gonsalves CAS

SAMPLER'S SIGNATURE

J9902630

DISTRIBUTION: WHITE - return to originator; YELLOW - lab; PINK - retained by originator

APPENDIX E

LETTER CLOSURE REPORT (EEG, 2002)

Mr. Brian Price / Pm

ELLIS
ENVIRONMENTAL
GROUP, LC

414 SW 140th Terrace
Newberry, FL 32669-5400
Phone (352) 332-3888
Fax (352) 332-3222
ellisenv.com

December 17, 2002

City of Jacksonville, FL
Regulatory and Environmental Services Department
Air and Water Quality Division
City Hall at St. James
117 W. Duval St., Suite 225
Jacksonville, FL 32202

Attn: Tom Griffin
Environmental Scientist

Re: Letter Closure Report
Removal of ASTs 250 No.1 and No.2
Naval Station Mayport
Mayport, FL

Dear Mr. Griffin:

Ellis Environmental Group, LC (EEG) is pleased to provide a Letter Closure Report for the Removal of Aboveground Storage Tanks (ASTs) 250 No. 1 and No.2 from Naval Station Mayport, Florida. The details of this removal action are as follows.

Introduction

On September 26, 2002, EEG was awarded a contract to remove two (2) 30,000-gallon ASTs in the vicinity of the previously removed Building 250 at Naval Station Mayport, Florida.

After completing contract submittal documents and attending a pre-construction meeting on October 15, 2002, EEG mobilized to the site on Monday, November 4, 2002, and completed tank and piping removal on Friday, November 8, 2002. The remainder of the project, including site restoration, was completed on Friday, December 6, 2002.

Site History

Naval Station Mayport is located near the mouth of the St. Johns River and is accessible from Atlantic Boulevard and Mayport Road. The installation consists of post-World War II facilities as well as training, ship support, and dock areas. The installation is located on a very flat sandy terrain with little or no slope. The St. Johns River forms the northern border of the naval station. The installation is completely serviced with wastewater and stormwater collection and control systems that prevent surcharge or migratory discharge into the inland waterway (see Figure 1 for site location and Figure 2 for tank location).

The two (2) 30,000-gallon ASTs were installed at Building 250 as a storage system for waste oils prior to burning those oils in a boiler that provided both steam and hot water for the naval facility. The exact date of the installation is unknown.

The use of these ASTs as a storage system for heating oils renders these tanks a "non-regulated " item for the purposes of reporting and removal under FAC 62-770.

On Tuesday, October 22, 2002, Bill Mack of the City of Jacksonville was notified of the pending removal of these tanks. Mr. Mack indicated that a letter closure report should be sent to Tom Griffin, environmental scientist at the City of Jacksonville Regulatory and Environmental Services Department.

Aboveground Storage Tank Removal

The AST removal process commenced on Monday, November 4, 2002. On that date, two hundred (200) gallons of spent fuel oil (diesel) and rainwater were removed from the two tanks by a vacuum truck by EEG subcontractor Marine Industrial Services (MIS). The fuel oil and water mixture was transported to Industrial Water Services by MIS for treatment and disposal. A copy of Manifest Document No. 12173 is included with this closure letter as Attachment 1.

The tank and pipe cleaning process was executed by MIS from Tuesday, November 5, 2002, through Thursday, November 7, 2002. One thousand six hundred (1,600) gallons of piping and tank wash water was collected. On Friday, November 8, 2002, this petroleum-contaminated wash water was taken to Industrial Water Services for treatment and disposal by MIS. A copy of Manifest Document No. 12174 is included with this closure letter as Attachment 2.

On Thursday, November 7, 2002, EEG engineer John D. Scott (FL PE #30327) used an LEL/oxygen meter to test and certify that both tanks were inert. The ends of the tanks were cut, rendering them unusable, and all piping was removed on the same day.

On November 7, 2002, the piping was taken to Berman Metals in Jacksonville, Florida. The tanks were taken to Commercial Metals in Jacksonville, Florida, on November 8, 2002. Certification of proper disposal of the tanks and the piping is contained in a letter from MIS to EEG dated December 3, 2002. This letter is provided as Attachment 3.

Site Restoration

Concrete and foundation removal commenced on Monday, November 11, 2002, and was completed on Friday, November 22, 2002.

Curb restoration and site fill/grading was completed on Wednesday, November 27, 2002.

Site sodding (Argentine Bahia) was completed on Wednesday, November 27, 2002, and final fencing and site restoration per the plans and specifications were completed on Friday, December 6, 2002.

Summary and Conclusions

The removal and site restoration of ASTs 250 No. 1 and No. 2 were uneventful. The tank contents and wastewater were disposed of properly and tracked by individual waste manifests. The site was restored to specified grades and sodded. The area was fenced and the new fencing was tied to existing fencing. This removal action should be considered a clean closure and should require no further action.

Should you have any questions or comments or require any additional information in the interim, please advise.

EEG appreciates the opportunity to provide these professional services and it has been a pleasure working with all parties concerned with this project.

Sincerely,
ELLIS ENVIRONMENTAL GROUP, LC

17 Dec 2002

John D. (Jack) Scott, PE
Florida PE #30327

cc: Brian Price, Project Manager
Jan Bovier, Mayport Environmental
Conrad Mueller, CSR

Enclosures

NON-HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No.	Manifest Doc. No. 12173	2. Page 1 of	60014

3. Generator's Name and Mailing Address: US NAVY / NS MAYPORT / MAYPORT FL	210
4. Generator's Phone (904) 270-2228	

5. Transporter 1 Company Name	6. US EPA ID Number	A. Transporter's Phone
MARINE INDUSTRIAL SERVICES INC.	F L D 0 3 2 3 8 3 9 4 5	904-350-0006
7. Transporter 2 Company Name	8. US EPA ID Number	B. Transporter's Phone
9. Designated Facility Name and Site Address	10. US EPA ID Number	C. Facility's Phone
INDUSTRIAL WATER SERVICES / 1616 TALLEYRAND AVE / JACKSONVILLE, FL 32206	FLD 981 928 484	(904) 354-0372

11. Waste Shipping Name and Description	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a. DIESEL & RAINWATER	001	VT	200	GL
b. 200 gallons pumped from Tanks No. 1 & No. 2				
c.				
d.				

D. Additional Descriptions for Materials Listed Above	E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name	Signature	Month	Day	Year
[illegible]	[signature]	11	19	02

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
C. I. C. Stewart	[signature]	11	19	02

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year

GENERATOR — TRANSPORTER — FACILITY

GENERATOR'S COPY

Attachment 2

NON-HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No.	Manifest Doc. No. 12174	2. Page 1 of	6014

3. Generator's Name and Mailing Address [illegible] FL 32[illegible]

210

4. Generator's Phone ([illegible]) [illegible]

5. Transporter 1 Company Name	6. US EPA ID Number	A. Transporter's Phone
MARINE INDUSTRIAL SERVICES INC.	F L D 0 3 2 2 3 8 3 9 4 5	904-350-0006
7. Transporter 2 Company Name	8. US EPA ID Number	B. Transporter's Phone
9. Designated Facility Name and Site Address	10. US EPA ID Number	C. Facility's Phone
[illegible]	FL 0 9 8 1 3 2 8 4 8 [illegible]	35[illegible]0372

11. Waste Shipping Name and Description	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a. Petroleum Cont. + Water	0.01	VT	1600	GAL
b. Wash Water From Piping and Tanks 1600 gallons				
c.				
d.				

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name	Signature	Month	Day	Year
[illegible]	[illegible]	11	[illegible]	[illegible]

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
John [illegible]	[illegible]	11	8	07

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year

GENERATOR / TRANSPORTER / FACILITY

GENERATOR'S COPY

Attachment 3

MIS Marine Industrial Services, Inc.

P.O. Box 43175
Jacksonville, FL
32203-3175
(904) 350-0006

3 December 2002

Ellis Environmental Group, LLC
414 SW 140th Terrace
Newberry, FL 32669

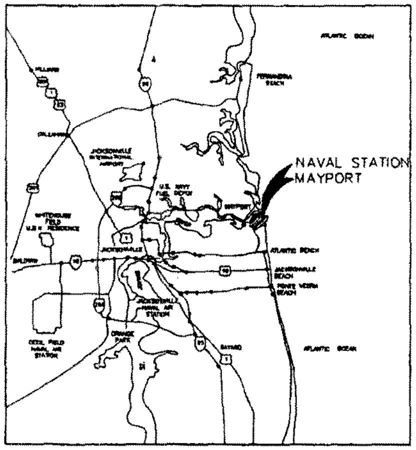
Attn: Jack Scott

Subj: N69272-02-C-2022, Bldg 259, and Mayport, NS

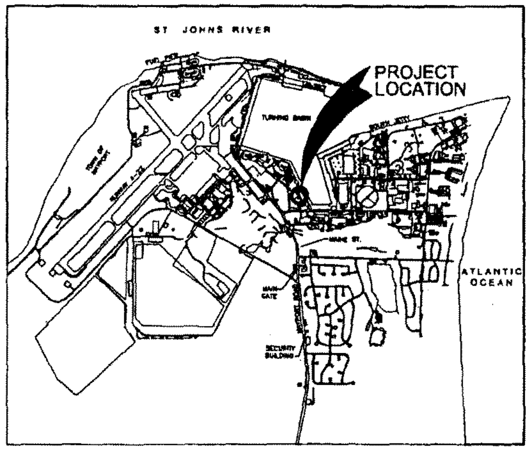
Marine Industrial Services, Inc. certifies that the tanks were disposed of at Commercial Metals and the piping was disposed of at Berman metals.

Clark Chandler, Projects Manager

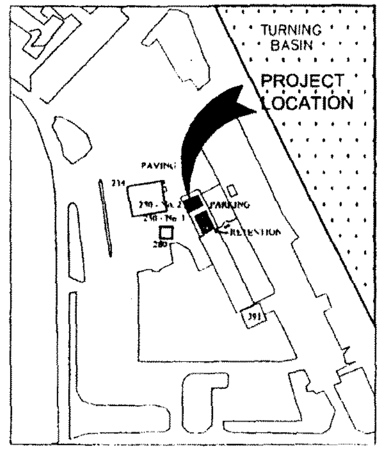
REMOVE ABOVE GROUND STORAGE TANKS 250 NO. 1 & 250 NO. 2
NAVAL STATION MAYPORT, FLORIDA



VICINITY MAP
NOT TO SCALE
PROJECT LOCATION



BASE MAP
NOT TO SCALE
LOCATION OF WORK



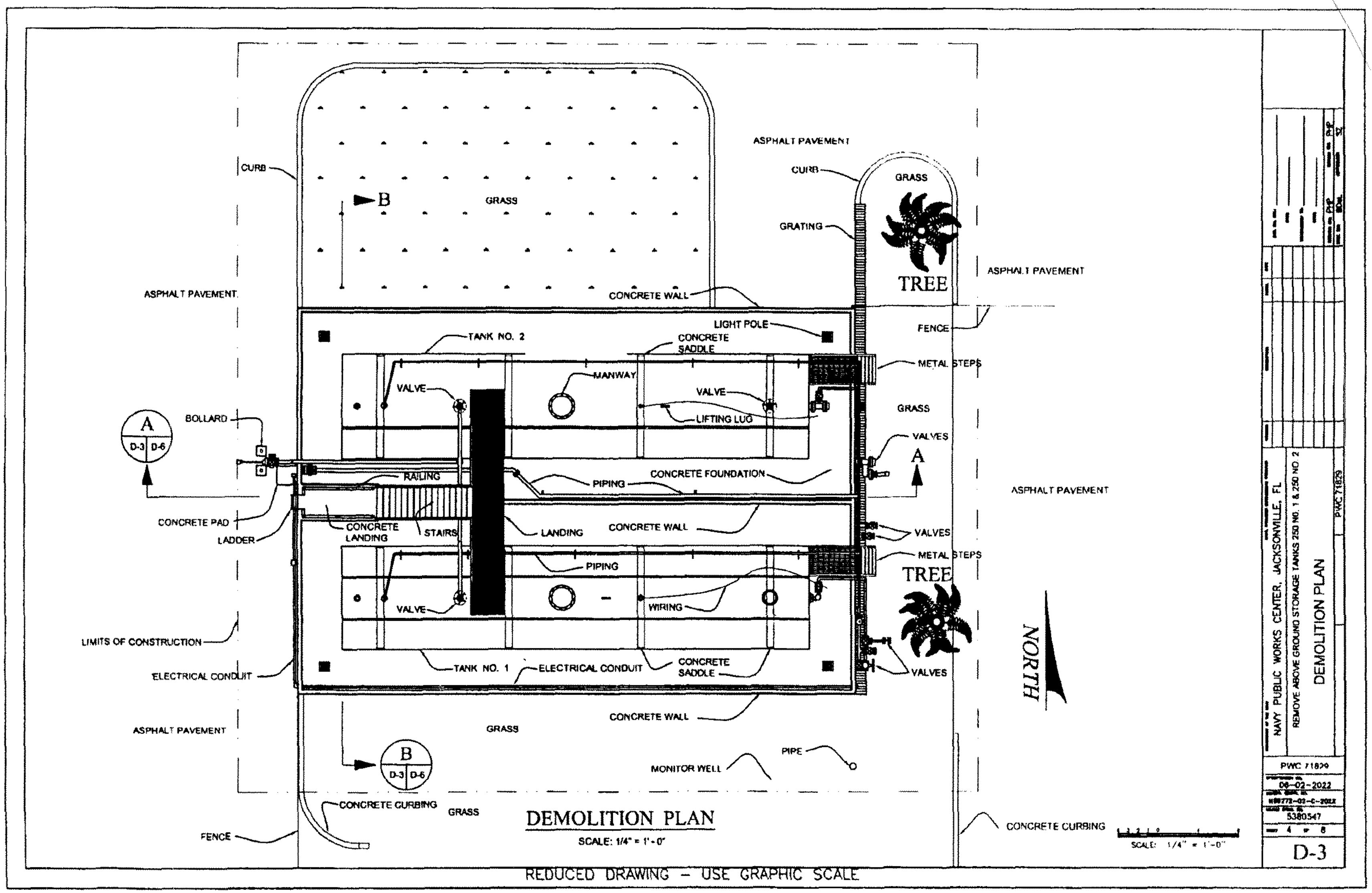
PROJECT LOCATION MAP
NOT TO SCALE
LOCATION OF WORK

NAVFAC DWG NO.	PAGE	SHEET	SHEET TITLE
5380544	1	T-1	TITLE SHEET
5380545	2	D-1	DEMOLITION NOTES
5380546	3	D-2	SITE DEMOLITION PLAN
5380547	4	D-3	SITE PLAN - EXISTING
5380548	5	D-4	SIDE ELEVATIONS
5380549	6	D-5	END ELEVATIONS
5380550	7	D-6	SECTIONS
5380551	8	A-1	NEW SITE PLAN

NAVAL STATION MAYPORT, FLA.
REMOVE ABOVE GROUND STORAGE TANKS 250 No. 1 & 250 No. 2
TITLE COVER SHEET
T-1

REDUCED DRAWING - USE GRAPHIC SCALE

Figure 1



ASPHALT PAVEMENT
CURB
GRASS
B
GRATING
TREE
ASPHALT PAVEMENT
CONCRETE WALL
FENCE
LIGHT POLE
TANK NO. 2
CONCRETE SADDLE
METAL STEPS
MANWAY
VALVE
VALVE
LIFTING LUG
GRASS
A
D-3
D-6
BOLLARD
VALVES
A
RAILING
PIPING
CONCRETE FOUNDATION
ASPHALT PAVEMENT
CONCRETE PAD
LADDER
CONCRETE LANDING
STAIRS
LANDING
CONCRETE WALL
VALVES
METAL STEPS
PIPING
TREE
VALVE
WIRING
NORTH
LIMITS OF CONSTRUCTION
ELECTRICAL CONDUIT
TANK NO. 1
ELECTRICAL CONDUIT
CONCRETE SADDLE
VALVES
CONCRETE WALL
ASPHALT PAVEMENT
GRASS
B
D-3
D-6
PIPE
MONITOR WELL
CONCRETE CURBING
GRASS
DEMOLITION PLAN
SCALE: 1/4" = 1'-0"
FENCE
CONCRETE CURBING
SCALE: 1/4" = 1'-0"
REDUCED DRAWING – USE GRAPHIC SCALE
NAVY PUBLIC WORKS CENTER, JACKSONVILLE, FL
REMOVE ABOVE GROUND STORAGE TANKS 250 NO. 1 & 250 NO. 2
DEMOLITION PLAN
PWC 71829
PWC 71829
06-02-2022
5380547
4
8
D-3

Figure 2

APPENDIX F

SOIL BORING LOGS

Tetra Tech NUS, Inc.

BORING LOG

Page ___ of ___

PROJECT NAME: CTO 303/ Site 250 BORING NUMBER: MPT-250-MW1
PROJECT NUMBER: N5863 DATE: 08.22.03
DRILLING COMPANY: Partridge Well Drilling GEOLOGIST: David Siefken
DRILLING RIG: Truck Mounted Rig DRILLER: Alan Kelly

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	0-6"						grass, fine to medium, white sand, and organic material						
							loose, light brown, fine to medium sand,-						
							with shell hash		~3.5' water level				
							(5') loose, light brown, fine to medium sand,-						
	10'						with shell hash						
							compact, light brown to white fine and very fine						
							sand, - with increasing percentage of shell hash						
	13.5'												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): ______

Remarks: ______

Converted to Well: Yes ______ No ______ Well I.D. #: ______

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: CTO 303/ Site 250
BORING NUMBER: MPT-250-MW2
PROJECT NUMBER: N5863
DATE: 08.20.03
DRILLING COMPANY: Partridge Well Drilling
GEOLOGIST: David Siefken
DRILLING RIG: Truck Mounted Rig
DRILLER: Alan Kelly

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	0-6"				grass, fine to medium, white sand, and organic material								
					loose, light brown, fine to medium sand,-								
					with shell hash				~3.5' water level				
					(5') loose, light brown, fine to medium sand,-								
	10'				with shell hash								
					compact, light brown to white fine and very fine								
					sand, - with increasing percentage of shell hash								
	13.5'												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: ______

Drilling Area Background (ppm): ______

Converted to Well: Yes ______ No ______ Well I.D. #: ______

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: CTO 303/ Site 250
BORING NUMBER: MPT-250-MW3
PROJECT NUMBER: N5863
DATE: 08.20.03
DRILLING COMPANY: Partridge Well Drilling
GEOLOGIST: David Siefken
DRILLING RIG: Truck Mounted Rig
DRILLER: Alan Kelly

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	0-6"				grass, fine to medium, white sand, and organic material								
					loose, light brown, fine to medium sand,-								
					with shell hash				~3.5' water level				
					(5') loose, light brown, fine to medium sand,-								
	10'				with shell hash								
					compact, light brown to white fine and very fine								
					sand, - with increasing percentage of shell hash								
	13.5'												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): ____

Remarks: ____

Converted to Well: Yes ____ No ____ Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

Page ___ of ___

PROJECT NAME: CTO 303/ Site 250
BORING NUMBER: MPT-250-MW4
PROJECT NUMBER: N5863
DATE: 08.20.03
DRILLING COMPANY: Partridge Well Drilling
GEOLOGIST: David Siefken
DRILLING RIG: Truck Mounted Rig
DRILLER: Alan Kelly

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	U S C S *	Remarks	PID/FID Reading (ppm): Sample	PID/FID Reading (ppm): Sampler BZ	PID/FID Reading (ppm): Borehole**	PID/FID Reading (ppm): Driller BZ**
	0-6"				grass, fine to medium, white sand, and organic material								
					loose, light brown, fine to medium sand,-								
					with shell hash				~4' water level				
					(5') loose, light brown, fine to medium sand,-								
	10'				with shell hash								
					compact, light brown to white fine and very fine								
					sand, - with increasing percentage of shell hash								
	13.5'												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: ______

Drilling Area Background (ppm): ______

Converted to Well: Yes ______ No ______ Well I.D. #: ______

Tetra Tech NUS, Inc.

BORING LOG

Page ___ of ___

PROJECT NAME:	CTO 303/ Site 250	BORING NUMBER:	MPT-250-MW5
PROJECT NUMBER:	N5863	DATE:	08.22.03
DRILLING COMPANY:	Partridge Well Drilling	GEOLOGIST:	David Siefken
DRILLING RIG:	Truck Mounted Rig	DRILLER:	Alan Kelly

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION			USCS *	Remarks	PID/FID Reading (ppm)			
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole**	Driller BZ**
	0-6"				grass, fine to medium, white sand, and organic material								
					loose, light brown, fine to medium sand,-								
					with shell hash				~4' water level				
					(5') loose, light brown, fine to medium sand,-								
	10'				with shell hash								
					compact, light brown to white fine and very fine								
					sand, - with increasing percentage of shell hash								
	13.5'												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: ______________________________

Drilling Area Background (ppm): ______

Converted to Well: Yes ______ No ______ Well I.D. #: ______________

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: CTO 303/ Site 250
BORING NUMBER: MPT-250-MW6D
PROJECT NUMBER: N5863
DATE: 08.19.03
DRILLING COMPANY: Partridge Well Drilling
GEOLOGIST: David Siefken
DRILLING RIG: Truck Mounted Rig
DRILLER: Alan Kelly

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	0-6"				grass, fine to medium, white sand, and organic material								
					loose, light brown, fine to medium sand,-								
					with shell hash				~3.5' water level				
					(5') loose, light brown, fine to medium sand,-								
	10'				with shell hash								
					compact, light brown to white fine and very fine								
					sand, - with increasing percentage of shell hash								
	20'												
					compact, fine and very fine sands, light green								
					color, trace of silts								
					(25') clayey sand, very fine to fine greenish in color								
					some shell hash very tight sands 28'-30'.								
	30'												
					loose, sandy soft clay with very fine sands with some silts,								
					olive greenish color								
	40'												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: ____________________

Drilling Area Background (ppm): ______

Converted to Well: Yes ______ No ______ Well I.D. #: ______

APPENDIX G

MONITORING WELL CONSTRUCTION DIAGRAMS

Tetra Tech NUS, Inc.

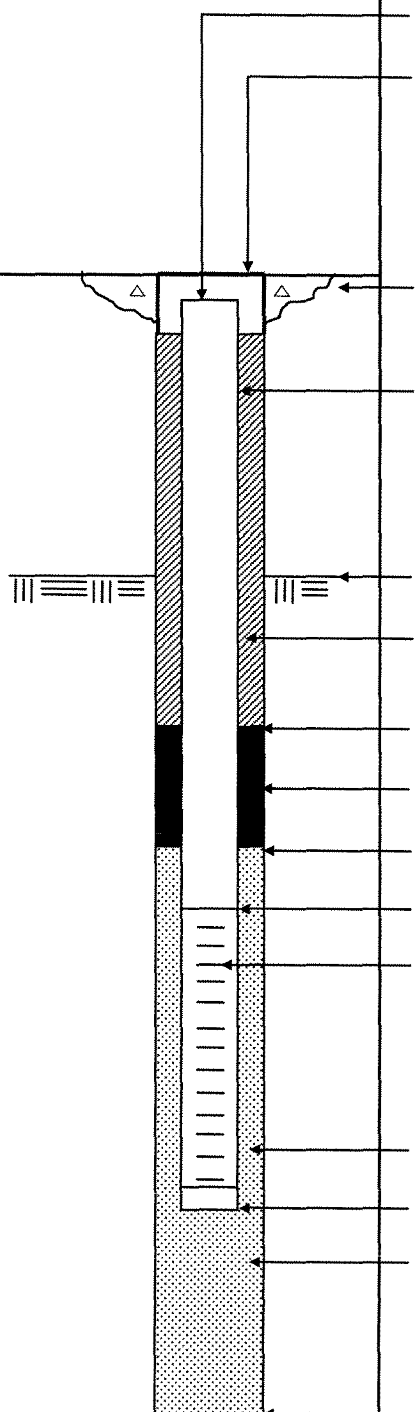
WELL No.: MPT-250-MW1

SHALLOW MONITORING WELL SHEET

PROJECT:	CTO 303	DRILLING Co.:	Partridge Well Drilling	BORING No.:	MW1
PROJECT No.:	N5863	DRILLER:	Alan Kelly	DATE COMPLETED:	08/22/03
SITE:	Site 250	DRILLING METHOD:	H.S.A.	NORTHING:	2201719.63
GEOLOGIST:	David Siekfen	DEV. METHOD:	Submersible	EASTING:	526540.69

Ground Elevation =

Datum:



Not to Scale

Elevation / Depth of Top of Riser: NA /

Elevation / Height of Top of Surface Casing: NA /

I.D. of Surface Casing: NA

Type of Surface Casing: 8" Manhole

Type of Surface Seal: QUIKRETE

I.D. of Riser: 2"

Type of Riser: PVC

Borehole Diameter: 8"

Elevation / Depth Top of Rock: / NA

Type of Backfill: TYPE 1 PORTLAND GROUT

Elevation / Depth of Seal: / 1.5

Type of Seal: 30/65 SAND

Elevation / Depth of Top of Filter Pack: / 2.5

Elevation / Depth of Top of Screen: / 3.0

Type of Screen: PVC

Slot Size x Length: 0.010 -INCH

I.D. of Screen: 2"

Type of Filter Pack: 20/30

Elevation / Depth of Bottom of Screen: / 13.0

Elevation / Depth of Bottom of Filter Pack: / 13.0

Type of Backfill Below Well:

Elevation / Total Depth of Borehole: / 13.5

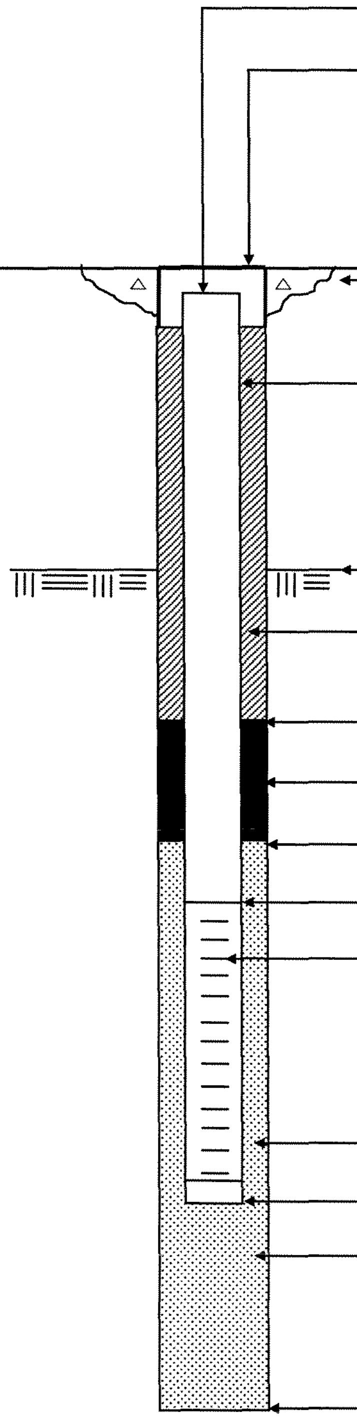
Tetra Tech NUS, Inc.

WELL No.: MPT-250-MW2

SHALLOW MONITORING WELL SHEET

PROJECT:	CTO 303	DRILLING Co.:	Partridge Well Drilling	BORING No.:	MW2
PROJECT No.:	N5863	DRILLER:	Alan Kelly	DATE COMPLETED:	08/20/03
SITE:	Site 250	DRILLING METHOD:	H.S.A.	NORTHING:	2201673.13
GEOLOGIST:	David Siekfen	DEV. METHOD:	Submersible	EASTING:	526566.31

Ground Elevation =
Datum:



Not to Scale

Elevation / Depth of Top of Riser:	NA /
Elevation / Height of Top of Surface Casing:	NA /
I.D. of Surface Casing:	NA
Type of Surface Casing:	8" Manhole
Type of Surface Seal:	QUIKRETE
I.D. of Riser:	2"
Type of Riser:	PVC
Borehole Diameter:	8"
Elevation / Depth Top of Rock:	/ NA
Type of Backfill:	TYPE 1 PORTLAND GROUT
Elevation / Depth of Seal:	/ 1.5
Type of Seal:	30/65 SAND
Elevation / Depth of Top of Filter Pack:	/ 2.5
Elevation / Depth of Top of Screen:	/ 3.0
Type of Screen:	PVC
Slot Size x Length:	0.010 -INCH
I.D. of Screen:	2"
Type of Filter Pack:	20/30
Elevation / Depth of Bottom of Screen:	/ 13.0
Elevation / Depth of Bottom of Filter Pack:	/ 13.0
Type of Backfill Below Well:	
Elevation / Total Depth of Borehole:	/ 13.5

Tetra Tech NUS, Inc.

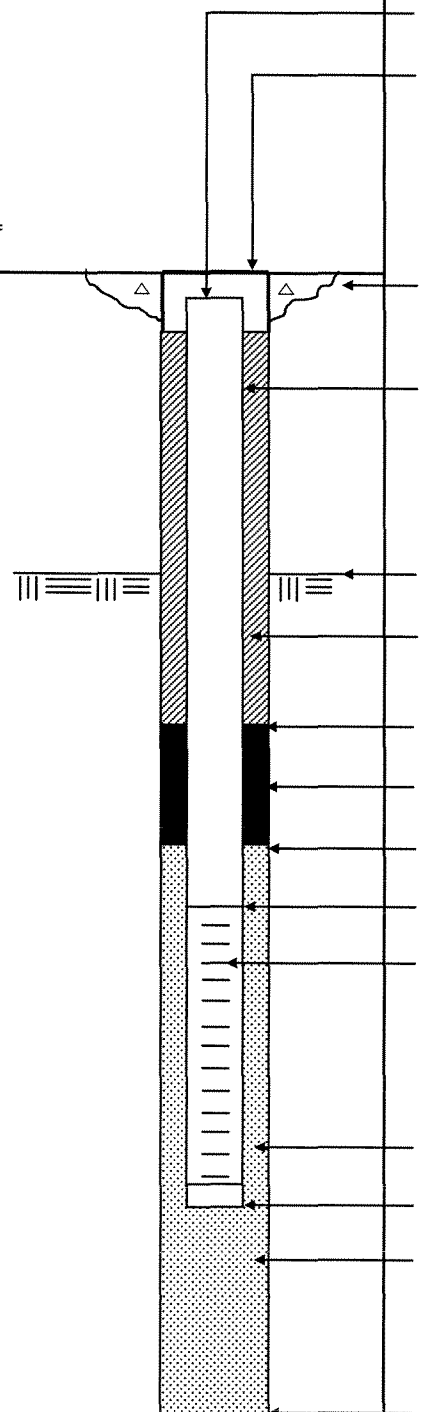
WELL No.: MPT-250-MW3

SHALLOW MONITORING WELL SHEET

PROJECT:	CTO 303	DRILLING Co.:	Partridge Well Drilling	BORING No.:	MW3
PROJECT No.:	N5863	DRILLER:	Alan Kelly	DATE COMPLETED:	08/20/03
SITE:	Site 250	DRILLING METHOD:	H.S.A.	NORTHING:	2201741.11
GEOLOGIST:	David Siekfen	DEV. METHOD:	Submersible	EASTING:	526650.62

Ground Elevation =

Datum:



Not to Scale

Elevation / Depth of Top of Riser:	NA /
Elevation / Height of Top of Surface Casing:	NA /
I.D. of Surface Casing:	NA
Type of Surface Casing:	8" Manhole
Type of Surface Seal:	QUIKRETE
I.D. of Riser:	2"
Type of Riser:	PVC
Borehole Diameter:	8"
Elevation / Depth Top of Rock:	/ NA
Type of Backfill:	TYPE 1 PORTLAND GROUT
Elevation / Depth of Seal:	/ 1.5
Type of Seal:	30/65 SAND
Elevation / Depth of Top of Filter Pack:	/ 2.5
Elevation / Depth of Top of Screen:	/ 3.0
Type of Screen:	PVC
Slot Size x Length:	0.010 -INCH
I.D. of Screen:	2"
Type of Filter Pack:	20/30
Elevation / Depth of Bottom of Screen:	/ 13.0
Elevation / Depth of Bottom of Filter Pack:	/ 13.0
Type of Backfill Below Well:	
Elevation / Total Depth of Borehole:	/ 13.5

Tetra Tech NUS, Inc.

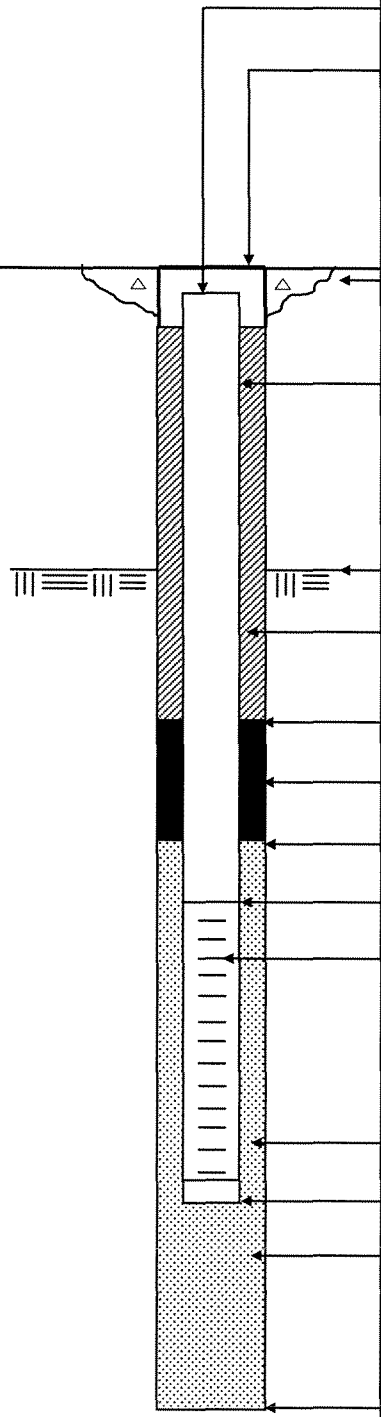
WELL No.: MPT-250-MW4

SHALLOW MONITORING WELL SHEET

PROJECT:	CTO 303	DRILLING Co.:	Partridge Well Drilling	BORING No.:	MW4
PROJECT No.:	N5863	DRILLER:	Alan Kelly	DATE COMPLETED:	08/20/03
SITE:	Site 250	DRILLING METHOD:	H.S.A.	NORTHING:	2201692.38
GEOLOGIST:	David Siefken	DEV. METHOD:	Submersible	EASTING:	526653.14

Ground Elevation =

Datum:



Not to Scale

Elevation / Depth of Top of Riser:		NA /
Elevation / Height of Top of Surface Casing:		NA /
I.D. of Surface Casing:	NA	
Type of Surface Casing:	8" Manhole	
Type of Surface Seal:	QUIKRETE	
I.D. of Riser:	2"	
Type of Riser:	PVC	
Borehole Diameter:	8"	
Elevation / Depth Top of Rock:		/ NA
Type of Backfill:	TYPE 1 PORTLAND GROUT	
Elevation / Depth of Seal:		/ 1.5
Type of Seal:	30/65 SAND	
Elevation / Depth of Top of Filter Pack:		/ 2.5
Elevation / Depth of Top of Screen:		/ 3.0
Type of Screen:	PVC	
Slot Size x Length:	0.010 -INCH	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30	
Elevation / Depth of Bottom of Screen:		/ 13.0
Elevation / Depth of Bottom of Filter Pack:		/ 13.0
Type of Backfill Below Well:		
Elevation / Total Depth of Borehole:		/ 13.5

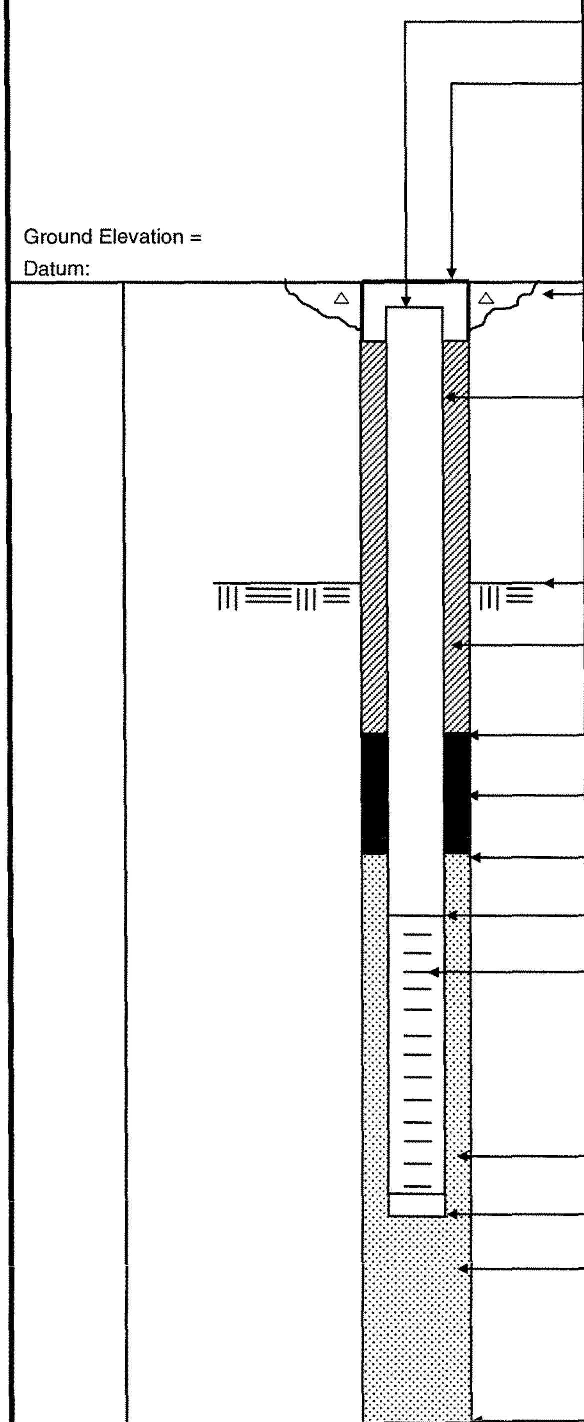
Tetra Tech NUS, Inc.

WELL No.: MPT-250-MW5

SHALLOW MONITORING WELL SHEET

PROJECT:	CTO 303	DRILLING Co.:	Partridge Well Drilling	BORING No.:	MW5
PROJECT No.:	N5863	DRILLER:	Alan Kelly	DATE COMPLETED:	08/22/03
SITE:	Site 250	DRILLING METHOD:	H.S.A.	NORTHING:	2201788.77
GEOLOGIST:	David Siefken	DEV. METHOD:	Submersible	EASTING:	526471.79

Ground Elevation =
Datum:



Not to Scale

Elevation / Depth of Top of Riser: NA /

Elevation / Height of Top of Surface Casing: NA /

I.D. of Surface Casing: NA

Type of Surface Casing: 8" Manhole

Type of Surface Seal: QUIKRETE

I.D. of Riser: 2"

Type of Riser: PVC

Borehole Diameter: 8"

Elevation / Depth Top of Rock: / NA

Type of Backfill: TYPE 1 PORTLAND GROUT

Elevation / Depth of Seal: / 1.5

Type of Seal: 30/65 SAND

Elevation / Depth of Top of Filter Pack: / 2.5

Elevation / Depth of Top of Screen: / 3.0

Type of Screen: PVC

Slot Size x Length: 0.010 -INCH

I.D. of Screen: 2"

Type of Filter Pack: 20/30

Elevation / Depth of Bottom of Screen: / 13.0

Elevation / Depth of Bottom of Filter Pack: / 13.0

Type of Backfill Below Well:

Elevation / Total Depth of Borehole: / 13.5

Tetra Tech NUS, Inc.

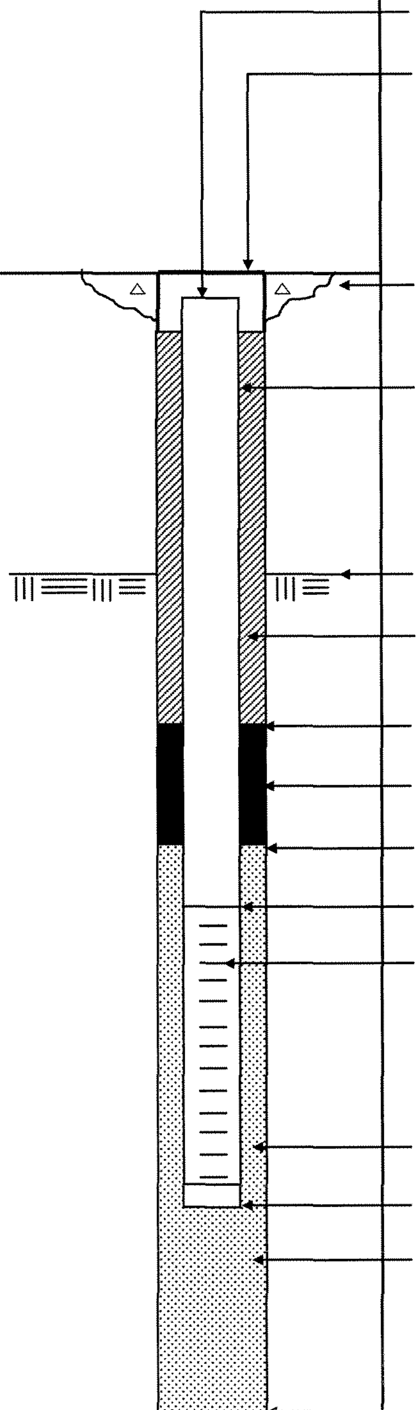
WELL No.: MPT-250-MW6D

SHALLOW MONITORING WELL SHEET

PROJECT:	CTO 303	DRILLING Co.:	Partridge Well Drilling	BORING No.:	MW6D
PROJECT No.:	N5863	DRILLER:	Alan Kelly	DATE COMPLETED:	08/19/03
SITE:	Site 250	DRILLING METHOD:	H.S.A.	NORTHING:	2201720.81
GEOLOGIST:	David Siefken	DEV. METHOD:	Submersible	EASTING:	526544.07

Ground Elevation =

Datum:



Not to Scale

Elevation / Depth of Top of Riser:	NA /
Elevation / Height of Top of Surface Casing:	NA /
I.D. of Surface Casing:	NA
Type of Surface Casing:	8" Manhole
Type of Surface Seal:	QUIKRETE
I.D. of Riser:	2"
Type of Riser:	PVC
Borehole Diameter:	8"
Elevation / Depth Top of Rock:	/ NA
Type of Backfill:	TYPE 1 PORTLAND GROUT
Elevation / Depth of Seal:	/ 31.0
Type of Seal:	30/65 SAND
Elevation / Depth of Top of Filter Pack:	/ 33.0
Elevation / Depth of Top of Screen:	/ 35.0
Type of Screen:	PVC
Slot Size x Length:	0.010 -INCH
I.D. of Screen:	2"
Type of Filter Pack:	20/30
Elevation / Depth of Bottom of Screen:	/ 40.0
Elevation / Depth of Bottom of Filter Pack:	/ 40.0
Type of Backfill Below Well:	
Elevation / Total Depth of Borehole:	/ 40.5

APPENDIX H

MONITORING WELL DEVELOPMENT RECORDS AND GROUNDWATER SAMPLING LOGS

DN: 5863:4.4:02

Shallow next to deep

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of ___

Well: 250- mw-1
Site: 250
Date Installed: 8.22.03
Date Developed: 8.25.03
Dev. Method: Sub
Pump Type: pump

Depth to Bottom (ft.): 13
Static Water Level Before (ft.): 3.5
Static Water Level After (ft.): ___
Screen Length (ft.): 10
Specific Capacity: ___
Casing ID (in.): 2

Responsible Personnel: D. Siefker
Drilling Co.: Partridge
Project Name: SAR
Project Number: 5863

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units ___)	Turbidity (NTU)	Remarks (odor, color, etc.)
1520			3.98	28.1	7.25	.756	222	
1530			3.91	27.9	7.28	.749	8.2	
1540			3.89	27.8	7.29	.746	1.8	
1550		55	3.87	27.8	7.28	.746	1.0	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of ___

MPT-250-MW2

Well: 250 - Cross Down Crader
Site: 250
Date Installed: 8.20
Date Developed: 8.23.03
Dev. Method: Sub
Pump Type: Pump

Depth to Bottom (ft.): ___
Static Water Level Before (ft.): 3.6
Static Water Level After (ft.): 3.5
Screen Length (ft.): 10
Specific Capacity: ___
Casing ID (in.): 2

Responsible Personnel: D. Stephen
Drilling Co.: Partridge
Project Name: SAR
Project Number: 5863

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units ___)	Turbidity (NTU)	Remarks (odor, color, etc.)
1040			3.8	29.1	7.10	.860	230	
1045			3.8	29.1	7.16	.860	192	Clear
1050			3.9	29.1	7.18	.852	170	
1055			3.8	29.0	7.19	.852	94	Clear
11.00	-	55	3.8	29.0	7.19	.847	110	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of ___

MPT-250-MW 3

Well: 250 - most N well
Site: 250
Date Installed: 8.20.03
Date Developed: 8.23
Dev. Method: Sub
Pump Type: pump

Depth to Bottom (ft.): 13
Static Water Level Before (ft.): 3.8
Static Water Level After (ft.): 3.6
Screen Length (ft.): 10
Specific Capacity:
Casing ID (in.): 2

Responsible Personnel: Dave Siefken
Drilling Co.: Partridge
Project Name: SAR
Project Number: 5863

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units ____)	Turbidity (NTU)	Remarks (odor, color, etc.)
1215			5.2	26.5	7.25	.640	631	
1220			5.4	26.4	7.22	.656	64	
1225			5.5	26.4	7.22	.667	34	
1230			5.5	26.4	7.23	.665	32	
1240		55	5.5	26.5	7.23	.664	30	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of ___

Well: mpT 250-mw 4 250
Site: 250
Date Installed: 8.20.03
Date Developed: 8.23
Dev. Method: Sub
Pump Type: pump

Depth to Bottom (ft.): 13
Static Water Level Before (ft.): 3.7
Static Water Level After (ft.): 3.6
Screen Length (ft.): 10
Specific Capacity: –
Casing ID (in.): 2

Responsible Personnel: Dave Siefker
Drilling Co.: Partridge
Project Name: 5863
Project Number: SAR

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units ____)	Turbidity (NTU)	Remarks (odor, color, etc.)
1130			4.8	27.5	8.11	.298	400	
1135			5.5	27.2	8.14	.296	280	
1145			5.6	27.2	8.24	.291	96	
1150			5.5	27.2	8.35	.305	97	
1155			5.6	27.4	8.35	.307	95	
1200		55	5.6	27.2	8.36	.3.06	43	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of ____

MPT-250 MW 5

Well: 250 Upgradient
Site: 250
Date Installed: 8-22-03
Date Developed: 8-23-03
Dev. Method: Sub
Pump Type: Pump

Depth to Bottom (ft.): ______
Static Water Level Before (ft.): ______
Static Water Level After (ft.): ______
Screen Length (ft.): 10
Specific Capacity: ______
Casing ID (in.): 2

Responsible Personnel: D. Siefken
Drilling Co.: Partridge Well
Project Name: SAR
Project Number: 5863

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units ____)	Turbidity (NTU)	Remarks (odor, color, etc.)
1000				28.5	7.55	.621	111	
1015				28.5	7.63	.619	160	Clear.
1020				28.5	7.64	.622	130	
1025	-	55		28.5	7.60	.622	130	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: 250 Deep
Site: 250
Date Installed: 8.19.03
Date Developed: 8.28.03
Dev. Method: Surge
Pump Type: pump

Depth to Bottom (ft.): 40
Static Water Level Before (ft.): 4.2
Static Water Level After (ft.): 4.8
Screen Length (ft.): 5
Specific Capacity: –
Casing ID (in.): 2

Responsible Personnel: D. Snefker
Drilling Co.: Partridge
Project Name: SAR
Project Number: 5863

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units ____)	Turbidity (NTU)	Remarks (odor, color, etc.)
1025			8.72	28.1	7.86	.822	999	
1040			9.15	28.2	7.95	.809	750	
1050	55		9.11	28.1	7.93	.811	50	
1110			8.92	28.2	7.92	.815	22	
1120	110		8.67	28.2	7.94	.812	24	

Florida Department of Environmental Protection
GROUNDWATER SAMPLING LOG

SITE NAME: Site 250	SITE LOCATION: NS MPT

WELL NO: MW-2	SAMPLE ID: MPT-250-MW2	DATE: 11-24-03

PURGING DATA

WELL DIAMETER (in): 2	TOTAL WELL DEPTH (ft): 13	STATIC DEPTH TO WATER (ft): 3.98	WELL CAPACITY (gal/ft): .16
1 WELL VOLUME (gal) = (TOTAL WELL DEPTH – DEPTH TO WATER) X WELL CAPACITY =			
= (–) X =			
PURGE METHOD: Peristaltic	PURGE INITIATED AT: 1415	PURGE ENDED AT:	TOTAL VOL. PURGED (gal):

TIME	VOLUME PURGED (gal)	CUMUL. VOLUME PURGED (gal)	PURGE RATE (gpm)	DEPTH TO WATER (ft)	pH	TEMP. (°C)	COND. (µmhos)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR	ODOR
1415											
1425			400	4.02	6.85	27.42	.921	~~0.~~ 1.5	7.21	CL	sulfur
1428			400	4.02	6.85	27.43	.922	~~0.~~ 1.6	1.64	CL	Sulfur
1431			400	4.02	6.85	27.44	0.924	0.11	1.58	CL	Sulfur
1435			400	4.02	6.85	27.44	0.925	0.12	1.55	CL	Sulfur
1440											

WELL CAPACITY (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: DAVID SIEFKEN / TtNUS	SAMPLER(S) SIGNATURE(S): [signature]	
SAMPLING METHOD(S): Peristaltic	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
FIELD DECONTAMINATION: Y N	FIELD-FILTERED: Y N	DUPLICATE: Y N

SAMPLE CONTAINER SPECIFICATION			SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD
NO.	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOLUME ADDED IN FIELD (mL)	FINAL pH	
1	Am Gl	1l x2	HCL	1l x 2	–	TRPH
2	Am Gl	1l x 2	–	1l x 2	–	PAH

Florida Department of Environmental Protection
GROUNDWATER SAMPLING LOG

SITE NAME: Site 250		SITE LOCATION: NS MPT Site 250	
WELL NO: MW 5	SAMPLE ID: MPT-250-MW5		DATE: 11-24-03

PURGING DATA

WELL DIAMETER (in): 2	TOTAL WELL DEPTH (ft): 12.7	STATIC DEPTH TO WATER (ft): 3.75	WELL CAPACITY (gal/ft): .16
1 WELL VOLUME (gal) = (TOTAL WELL DEPTH – DEPTH TO WATER) X WELL CAPACITY = (–) X =			
PURGE METHOD: Peristaltic	PURGE INITIATED AT: 1335	PURGE ENDED AT:	TOTAL VOL. PURGED (gal):

TIME	VOLUME PURGED (gal)	CUMUL. VOLUME PURGED (gal)	PURGE RATE (gpm)	DEPTH TO WATER (ft)	pH	TEMP. (°C)	COND. (µmhos)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR	ODOR
1335			400	3.78							
1355			400	3.78	7.31	25.26	.539	0.28	5.59	CL	—
1358			400	3.79	7.30	25.26	.539	0.22	4.35	CL	-
1401			400	3.79	7.30	25.24	.538	0.20	3.71	CL	
1405			400	3.79	7.29	25.24	.538	0.18	3.30	CL	
1410	SAMPLE										

WELL CAPACITY (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: DAVID SIEFKEN	SAMPLER(S) SIGNATURE(S): [signature]	
SAMPLING METHOD(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
FIELD DECONTAMINATION: Y N	FIELD-FILTERED: Y N	DUPLICATE: Y N

SAMPLE CONTAINER SPECIFICATION			SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD
NO.	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOLUME ADDED IN FIELD (mL)	FINAL pH	
1	Am 6	1l x2	HCL	1l x2	<	TRPH
2	Am 6	1l x2	—	1l x2		PAH

Florida Department of Environmental Protection
GROUNDWATER SAMPLING LOG

SITE NAME: MW 1	SITE LOCATION: Site 250 NS MPT	
WELL NO: MPT-250-MW 1	SAMPLE ID: MW 1	DATE: 11-24-03

PURGING DATA

WELL DIAMETER (in): 2	TOTAL WELL DEPTH (ft): 13	STATIC DEPTH TO WATER (ft): 3.95	WELL CAPACITY (gal/ft): .16
1 WELL VOLUME (gal) = (TOTAL WELL DEPTH – DEPTH TO WATER) X WELL CAPACITY = (–) X =			
PURGE METHOD: Peristaltic	PURGE INITIATED AT: 1245	PURGE ENDED AT:	TOTAL VOL. PURGED (gal):

TIME	VOLUME PURGED (gal)	CUMUL. VOLUME PURGED (gal)	PURGE RATE (gpm)	DEPTH TO WATER (ft)	pH	TEMP. (°C)	COND. (µmhos)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR	ODOR
1245			400								
1305				401	6.90	26.15	.775	0.08	4.49	CL	Sulfer
1330			400	4.02	6.90	26.16	.774	0.10	3.52	CL	Sulfer
1333			400	4.02	6.89	26.10	.773	0.11	2.38	CL	"
1335			400	402	6.88	26.10	.771	0.11	2.35	CL	"
1340											

WELL CAPACITY (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: DAVE SIEFKEN	SAMPLER(S) SIGNATURE(S): [signature]	
SAMPLING METHOD(S): Peristaltic	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
FIELD DECONTAMINATION: Y (circled) N	FIELD-FILTERED: Y N (circled)	DUPLICATE: Y N

SAMPLE CONTAINER SPECIFICATION NO.	MATERIAL CODE	VOLUME	SAMPLE PRESERVATION: PRESERVATIVE USED	TOTAL VOLUME ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD
1	AMB	1l x2	HCL	2l		TRPH
2	AMB	1l x2	—	2l		PAH

Florida Department of Environmental Protection
GROUNDWATER SAMPLING LOG

SITE NAME: MW 6D		SITE LOCATION: Site 250 NS MPT	
WELL NO: MPT-250-MW6D	SAMPLE ID: MW 6D		DATE: 11-24-03

PURGING DATA

WELL DIAMETER (in): 2	TOTAL WELL DEPTH (ft): 40	STATIC DEPTH TO WATER (ft): 4.01	WELL CAPACITY (gal/ft): .16

1 WELL VOLUME (gal) = (TOTAL WELL DEPTH – DEPTH TO WATER) X WELL CAPACITY =

= (–) X =

PURGE METHOD: Peristaltic	PURGE INITIATED AT: 1250	PURGE ENDED AT:	TOTAL VOL. PURGED (gal):

TIME	VOLUME PURGED (gal)	CUMUL. VOLUME PURGED (gal)	PURGE RATE (gpm)	DEPTH TO WATER (ft)	pH	TEMP. (°C)	COND. (µmhos)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR	ODOR
1250			400								
1300			400	4.07	7.30	25.41	1.089	0.05	2.62	CL	—
1305			400	4.07	7.29	25.39	1.090	0.05	2.55		
1307			400	4.08	7.29	25.39	1.091	0.05	2.48		
1310			400	4.08	7.29	25.40	1.091	0.06	2.50	CL	—
1315	SAMPLE										

WELL CAPACITY (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: DAVID SEFFKEN	SAMPLER(S) SIGNATURE(S): [signature]	
SAMPLING METHOD(S): Peristaltic	SAMPLING INITIATED AT: 1315	SAMPLING ENDED AT:
FIELD DECONTAMINATION: Y N	FIELD-FILTERED: Y N	DUPLICATE: Y N

SAMPLE CONTAINER SPECIFICATION			SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD
NO.	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOLUME ADDED IN FIELD (mL)	FINAL pH	
1	Am	1l x2	HCL	1l x2		TRPH
2	Am	1l x 2	—	1l x 2		PAH

Florida Department of Environmental Protection
GROUNDWATER SAMPLING LOG

SITE NAME: Site 250	SITE LOCATION: MAYPORT	
WELL NO: MW-4	SAMPLE ID: MPT-250-MW4	DATE: 11-24-03

PURGING DATA

WELL DIAMETER (in): 2	TOTAL WELL DEPTH (ft): /	STATIC DEPTH TO WATER (ft): 4.85	WELL CAPACITY (gal/ft): .16
1 WELL VOLUME (gal) = (TOTAL WELL DEPTH – DEPTH TO WATER) X WELL CAPACITY = = (–) X =			
PURGE METHOD:	PURGE INITIATED AT:	PURGE ENDED AT:	TOTAL VOL. PURGED (gal):

TIME	VOLUME PURGED (gal)	CUMUL. VOLUME PURGED (gal)	PURGE RATE (gpm)	DEPTH TO WATER (ft)	pH	TEMP. (^{o}C)	COND. (µmhos)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR	ODOR
1035			400								
1045			400	4.86	7.65	26.04	.618	0.25	5.5	CL	
1050			400	4.86	7.66	26.05	.619	0.27	4.3	CL	
1055			400	4.86	7.67	26.05	.620	0.29	1.1	CL	—

WELL CAPACITY (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: DAVID SIEFKEN / TTNUS	SAMPLER(S) SIGNATURE(S): [signature]	
SAMPLING METHOD(S): Peristaltic	SAMPLING INITIATED AT: 1100	SAMPLING ENDED AT:
FIELD DECONTAMINATION: Y N	FIELD-FILTERED: Y N	DUPLICATE: Y N

SAMPLE CONTAINER SPECIFICATION			SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD
NO.	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOLUME ADDED IN FIELD (mL)	FINAL pH	
1	AMB	1l x2	HCL	1l	–	TRPH
2	ABC	1l x2	–	1l	–	PAH

Florida Department of Environmental Protection
GROUNDWATER SAMPLING LOG

SITE NAME: Site 250	SITE LOCATION: NS MPT - 250 - MW 1	
WELL NO: MW - 1	SAMPLE ID: MPT-250-MW 1	DATE: 9.23.03

PURGING DATA

WELL DIAMETER (in): 2"	TOTAL WELL DEPTH (ft): 13	STATIC DEPTH TO WATER (ft): 3.98	WELL CAPACITY (~~gal/ft~~): .16

1 WELL VOLUME (gal) = (TOTAL WELL DEPTH – DEPTH TO WATER) X WELL CAPACITY =

= (–   ) X   =

PURGE METHOD: Peristaltic	PURGE INITIATED AT: 1215	PURGE ENDED AT: 1250	TOTAL VOL. PURGED (gal): 12.5

TIME	VOLUME PURGED (gal)	CUMUL. VOLUME PURGED (~~gal~~) l	PURGE RATE (gpm)	DEPTH TO WATER (ft)	pH	TEMP. (°C)	COND. (µmhos)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR	ODOR
1215			400	3.98	6.49	28.77	0.855	0.19	9.2	CL	—
1225			400	3.91	6.52	28.54	0.861	2.91	5.3	CL	—
1235			400	3.92	6.64	28.21	0.868	3.09	4.2	CL	—
1245			400	3.92	6.63	28.18	0.870	3.65	2.1	CL	—
1250		12.5 l	400	3.92	6.63	28.14	0.872	3.72	1.8	CL	—
1255	SAMPLE										

WELL CAPACITY (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: David Siefken TtNUS	SAMPLER(S) SIGNATURE(S): [signature]	
SAMPLING METHOD(S): Low flow	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
FIELD DECONTAMINATION: Y N	FIELD-FILTERED: Y N (circled N)	DUPLICATE: Y N

SAMPLE CONTAINER SPECIFICATION			SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD
NO.	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOLUME ADDED IN FIELD (mL)	FINAL pH	
2	G	40 ml	HCL	2x 40 ml		8260 B VOC
1	G	1 l	—	1 l		8270 PAH
2	G	1 l	H_2SO_4	2x 1 l		TRPH - FL PRO
2	G	40 ml	—	2x 40 ml		504.1 EDB
1	P	250 ml	HNO_3	250 ml		Pb

Florida Department of Environmental Protection
GROUNDWATER SAMPLING LOG

SITE NAME: Site 250		SITE LOCATION: NS MPT-250	
WELL NO: MW-2	SAMPLE ID: MPT-250-MW-2		DATE: 9-23-03

PURGING DATA

WELL DIAMETER (in): 2"	TOTAL WELL DEPTH (ft): 13	STATIC DEPTH TO WATER (ft): 3.86	WELL CAPACITY (gal/ft): .16

1 WELL VOLUME (gal) = (TOTAL WELL DEPTH – DEPTH TO WATER) X WELL CAPACITY =

= (–) X =

PURGE METHOD: Peristaltic	PURGE INITIATED AT: 1145	PURGE ENDED AT: 1225	TOTAL VOL. PURGED (~~gal~~): 16 l

TIME	VOLUME PURGED (gal)	CUMUL. VOLUME PURGED (gal)	PURGE RATE (gpm)	DEPTH TO WATER (ft)	pH	TEMP. (°C)	COND. (µmhos)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR	ODOR
1145					~~6.71~~						
1200			400	3.86	6.71	29.39	0.864	0.22	2.48	CL	
1205			400	3.92	6.71	29.49	0.863	0.14	1.92	CL	
1210			400	3.92	6.74	29.52	0.863	0.35	2.11	CL	
1215			400	3.92	6.74	29.59	0.858	0.45	1.99	CL	
1220			400	3.93	6.74	29.60	0.857	0.60	1.87	CL	
1225		16 l	400	3.93	6.75	29.60	0.857	0.59	1.80	CL	

WELL CAPACITY (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: David Siefken / TtNUS	SAMPLER(S) SIGNATURE(S): [signature]	
SAMPLING METHOD(S): Low flow	SAMPLING INITIATED AT: 1235	SAMPLING ENDED AT: 1250
FIELD DECONTAMINATION: Y N	FIELD-FILTERED: Y N	DUPLICATE: Y N

SAMPLE CONTAINER SPECIFICATION			SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD
NO.	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOLUME ADDED IN FIELD (mL)	FINAL pH	
2	G	40 ml	HCL	2x 40 ml		8260 B VOC
1	G	1 l	—	1 l		8270 PAH
2	G	1 l	H_2SO_4	2x 1 l		TRPH - FL PRO
2	G	40 ml	—	2x 40 ml		504.1 EDB
1	P	250 ml	HNO_3	250 ml		Pb

Florida Department of Environmental Protection
GROUNDWATER SAMPLING LOG

SITE NAME: Site 250	SITE LOCATION: NS MPT Site 250	
WELL NO: mw 3	SAMPLE ID: MPT-250-mw-3	DATE: 10-7-03

PURGING DATA

WELL DIAMETER (in): 2	TOTAL WELL DEPTH (ft): 13	STATIC DEPTH TO WATER (ft): 4.96	WELL CAPACITY (gal/ft): .16

1 WELL VOLUME (gal) = (TOTAL WELL DEPTH – DEPTH TO WATER) X WELL CAPACITY =

= (–   ) X   =

PURGE METHOD:	PURGE INITIATED AT: 1330	PURGE ENDED AT: 1355	TOTAL VOL. PURGED (gal): 10 l

TIME 4.96	VOLUME PURGED (gal)	CUMUL. VOLUME PURGED (gal) l	PURGE RATE (gpm)	DEPTH TO WATER (ft)	pH	TEMP. (°C)	COND. (μmhos)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR	ODOR
1330	400		400								
1340		8 l		5.00	7.16	26.40	3150	0.23	3.2	Clear	None
1345		12 l		5.01	7.15	26.41	3154	0.18	0.0	Clear	
1350		16 l		5.01	7.15	26.40	3155	0.15	0.0	Clear	
1355		18		5.01	7.16	26.41	3155	0.13	0.0	cl	
1400	Sample										

WELL CAPACITY (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Dave Siefken / TtNUS	SAMPLER(S) SIGNATURE(S):	
SAMPLING METHOD(S): Low flow	SAMPLING INITIATED AT: 1400	SAMPLING ENDED AT: 1415
FIELD DECONTAMINATION: Y N	FIELD-FILTERED: Y N	DUPLICATE: Y N

SAMPLE CONTAINER SPECIFICATION			SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD
NO.	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOLUME ADDED IN FIELD (mL)	FINAL pH	
2	G	40	HCL	40		8260B
1	G	1000	–	1000		8270
2	G	1000	H_2SO_4	1000		TRPH
2	G	40	–	40		504.1
1	G	25	HNO_3	250		6010

Florida Department of Environmental Protection
GROUNDWATER SAMPLING LOG

SITE NAME: Site 250	SITE LOCATION: NS MPT	
WELL NO: MW-4	SAMPLE ID: MPT-250-MW-4	DATE: 9.23.03

PURGING DATA

WELL DIAMETER (in): 2	TOTAL WELL DEPTH (ft): 13	STATIC DEPTH TO WATER (ft): 4.91	WELL CAPACITY (gal/ft): 0.16

1 WELL VOLUME (gal) = (TOTAL WELL DEPTH – DEPTH TO WATER) X WELL CAPACITY =

= (–) X =

PURGE METHOD: Peristaltic	PURGE INITIATED AT:	PURGE ENDED AT:	TOTAL VOL. PURGED (gal):

TIME	VOLUME PURGED (gal)	CUMUL. VOLUME PURGED (gal)	PURGE RATE (gpm)	DEPTH TO WATER (ft)	pH	TEMP. (°C)	COND. (µmhos)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR	ODOR
1450				4.91							
1500			500	4.93	7.70	27.67	0.334	15.24	1.5	CL	—
1510			500	4.94	7.65	27.61	0.334	10.41	0	CL	
1515			500	4.94	7.65	27.68	0.334	11.40	0	CL	
1520			500	4.94	7.65	27.65	0.334	11.89	0	CL	
1525	SAMPLE										

WELL CAPACITY (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: David Siefken TtNUS	SAMPLER(S) SIGNATURE(S): [signature]	
SAMPLING METHOD(S): Low flow	SAMPLING INITIATED AT: 1525	SAMPLING ENDED AT: 1535
FIELD DECONTAMINATION: Y N	FIELD-FILTERED: Y N (circled N)	DUPLICATE: Y N

SAMPLE CONTAINER SPECIFICATION			SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD
NO.	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOLUME ADDED IN FIELD (mL)	FINAL pH	
2	G	40 ml	HCL	2x 40 ml		8260 B VOC
1	G	1 l	—	1 l		8270 PAH
2	G	1 l	H_2SO_4	2x 1 l		TRPH - FL PRO
2	G	40 ml	—	2x 40 ml		504.1 EDB
1	P	250 ml	HNO_3	250 ml		Pb

Florida Department of Environmental Protection
GROUNDWATER SAMPLING LOG

SITE NAME: Site 250		SITE LOCATION: NS MPT	
WELL NO: MW-5	SAMPLE ID: MPT-250-MW5		DATE: 9-23-03

PURGING DATA

WELL DIAMETER (in): 2"	TOTAL WELL DEPTH (ft): 12.3	STATIC DEPTH TO WATER (ft): 3.53	WELL CAPACITY (~~gal/ft~~): 6.1 l

1 WELL VOLUME (gal) = (TOTAL WELL DEPTH – DEPTH TO WATER) X WELL CAPACITY =

= (–) X =

PURGE METHOD: Peristaltic	PURGE INITIATED AT:	PURGE ENDED AT:	TOTAL VOL. PURGED (gal):

TIME	VOLUME PURGED (gal)	CUMUL. VOLUME PURGED (gal)	PURGE RATE (gpm)	DEPTH TO WATER (ft)	pH	TEMP. (°C)	COND. (µmhos)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR	ODOR
1300				3.53							
1310			500	3.57	7.08	28.55	.587	0.40	8.2	CL	None
1320			500	3.58	7.07	28.51	.586	0.37	5.7	CL	—
1330			500	3.58	7.08	28.55	.587	0.15	4.4	CL	—
1335			500	3.58	7.08	28.55	.589	0.13	4.3	CL	—

WELL CAPACITY (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: David Siefken TtNUS	SAMPLER(S) SIGNATURE(S): [signature]	
SAMPLING METHOD(S): Low flow	SAMPLING INITIATED AT: 1340	SAMPLING ENDED AT:
FIELD DECONTAMINATION: Y N	FIELD-FILTERED: Y (N)	DUPLICATE: Y N

SAMPLE CONTAINER SPECIFICATION			SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD
NO.	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOLUME ADDED IN FIELD (mL)	FINAL pH	
2	G	40 ml	HCL	2x 40 ml		8260 B VOC
1	G	1 l	—	1 l		8270 PAH
2	G	1 l	H_2SO_4	2x 1 l		TRPH - FL PRO
2	G	40 ml	—	2x 40 ml		504.1 EDB
1	P	250 ml	HNO_3	250 ml		Pb

Florida Department of Environmental Protection
GROUNDWATER SAMPLING LOG

SITE NAME: Site 250	SITE LOCATION: NS MPT	
WELL NO: MW 6	SAMPLE ID: MPT-250-MW6D	DATE: 9-23-03

PURGING DATA

WELL DIAMETER (in): 2"	TOTAL WELL DEPTH (ft): 13 ft	STATIC DEPTH TO WATER (ft): 4.32	WELL CAPACITY (~~gal/ft~~): 6.0l/(...

1 WELL VOLUME (gal) = (TOTAL WELL DEPTH – DEPTH TO WATER) X WELL CAPACITY =

= (–) X =

PURGE METHOD: Peristaltic	PURGE INITIATED AT: 1330	PURGE ENDED AT: 1400	TOTAL VOL. PURGED (gal):

TIME	VOLUME PURGED (gal)	CUMUL. VOLUME PURGED (gal)	PURGE RATE (gpm)	DEPTH TO WATER (ft)	pH	TEMP. (°C)	COND. (μmhos)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR	ODOR
1330											
1335			400	4.35	7.00	29.94	0.986	3.89	4.32	CL	–
1345			400	4.35	7.01	29.94	1.011	4.33	3.33	CL	–
1350			400	4.35	7.00	29.95	1.151	4.38	3.20	CL	
1355			400	4.35	7.00	25.97	1.153	4.38	2.9	CL	
1400			400	4.35	7.00	25.96	1.154	4.39	2.7	CL	
1405	Sample										

WELL CAPACITY (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: David Stephen / TtNus	SAMPLER(S) SIGNATURE(S): DSL	
SAMPLING METHOD(S): Low flow	SAMPLING INITIATED AT: 1405	SAMPLING ENDED AT: 1420
FIELD DECONTAMINATION: Y N	FIELD-FILTERED: Y N	DUPLICATE: Y N

SAMPLE CONTAINER SPECIFICATION			SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD
NO.	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOLUME ADDED IN FIELD (mL)	FINAL pH	
2	G	40 ml	HCL	2x 40 ml		8260 B VOC
1	G	1 l	–	1 l		8270 PAH
2	G	1 l	H_2SO_4	2x 1 l		TRPH - FL PRO
2	G	40 ml	–	2x 40 ml		504.1 EDB
1	P	250 ml	HNO_3	250 ml		Pb

APPENDIX I

MOBILE LABORATORY ANALYTICAL RESULTS

KB LABS, INC.
6821 Southwest Archer Road
Gainesville, Florida 32608
***Telephone* (352) 367-0073**
***Fax* (352) 367-0074**
***Email:* info@kbmobilelabs.com**

Mobile Laboratory Services

August 21, 2003

Mark Peterson
Tetra Tech NUS
8640 Philips Highway, Suite 16
Jacksonville, FL 32256

RE: NS Mayport CTO#303, Mayport, Florida - Final Data Report
KB Labs Project # 03-68

Dear Mr. Peterson:

Enclosed is the final report of the on-site analysis performed by KB Labs, Inc. at the above referenced site. Samples were collected and analyzed from August 11 to 14, 2003. Included are a brief project narrative, data report narrative, tables listing quality control results, final analytical results, and sample chain-of-custody form. This information will also be sent electronically. Including this cover page, the Final Report includes twenty-four pages.

KB Labs' mobile laboratories have been inspected by the FDOH Bureau of Laboratories and are NELAP Certified as of April 1, 2003. Our personnel, methodology, proficiency testing, and quality assurance requirements complied with the guidelines of Chapter 64E-1 of the Florida Administrative Code and with the consensus standards adopted at the National Environmental Laboratory Accreditation Conference (NELAC). Data for the site referenced above were determined in accordance with published procedures under Test Methods for Evaluating Solid Waste (EPA SW-846, Update III Revised May 1997). Unless otherwise indicated on the quality control narrative accompanying the data report, the quality assurance and quality control procedures performed in conjunction with analysis of groundwater samples demonstrated that the reported data met our standards for accuracy and precision under NELAC Standards.

If you have any questions, please do not hesitate to call me or Kelly Bergdoll, President of KB Labs, at (352) 367-0073.

Sincerely,

KB Labs, Inc.

Todd Romero
Director of Operations

KB LABS, INC.

PROJECT NARRATIVE

Client:	Tetra Tech NUS	Driller/Sampler:	TtNUS	Analyst:	Yael Hoogland
Site:	NS Mayport CTO303	KB Labs Project Manager:	Kelly Bergdoll	KB Labs Project #:	03-68
Onsite Dates:	08/11/03-08/14/03	Client Project Manager:	Mark Peterson	Matrix:	Water/Soil

Project Scope

From August 11 to 14, 2003, a total of 34 water samples and 31 soil samples from Sites 250 and 1241 located at NS Mayport, Mayport, FL were analyzed on-site by KB Labs, Inc. for Tetra Tech NUS. The samples were analyzed for benzene, toluene, ethylbenzene, xylenes, naphthalene, 1-&2-methylnaphthalene, and TPH.

NELAP Certification

KB Mobile Labs Unit KB1: FDOH NELAP Certification Number E82815

Analytical Procedure

Volatiles: All water samples were analyzed using SW846 Method 5030/8260 for waters. Ten (10) milliliters (mL) of water were purged with helium and the volatile organic compounds (VOCs) were collected on a solid-phase adsorption trap. The adsorption trap was heated and back-purged with helium and the components were separated by capillary column gas chromatography and measured with a mass spectrometer (GC/MS) operated in the electron impact full-scan mode. The individual VOCs in the samples were measured against corresponding VOC standards.

The soil samples were analyzed using SW846 Method 5030/8260. One (1) gram (g) of soil sample was added to 10 mL of laboratory reagent water, heated and analyzed like a water sample as described above.

TPH: An estimate of the petroleum content of a sample is calculated on samples that contain distinct petroleum patterns. Chromatograms with petroleum patterns have numerous non-target analytes with spectra associated with hydrocarbons. The chromatograms also contain a feature associated with petroleum hydrocarbon mixtures called the unresolved complex mixture (UCM). The UCM contains hydrocarbons too numerous to separate which forms a “hump” in the chromatogram.

In order to estimate the hydrocarbon content of a sample the chromatogram is integrated at the baseline and a total area count is obtained. The total area count is then corrected for areas contributed by the internal standards and surrogates. The corrected area count is then used to calculate a concentration using the response factor for toluene-d8.

Unless otherwise indicated, soil data is calculated based on the matrix received (i.e. wet weight basis).

Analytical Results

Laboratory results were provided to the client on an as-completed or next-day basis. Final results of the on-site analyses are provided in a hardcopy report. The data produced and reported in the field has been reviewed and approved for this final report by the Director of Operations for KB Labs.

Quality Control (QC) Data

Surrogate Recoveries – Table 1 lists the daily analytical sequence and percent recovery results for surrogate compounds, which were added to all analyses. Four (4) surrogate compounds were added to each analysis in order to continually monitor general method performance.

VOC Spike Recoveries – Table 2 lists the percent recovery results for matrix spike and laboratory control samples. A known amount of each target compound was added to selected field samples and to laboratory reagent water in order to monitor the performance of each of the target compounds in the actual matrix and in laboratory reagent water.

Method Blanks – Daily analysis of laboratory reagent water samples was performed in order to monitor the cleanliness of the analytical system.

Signature: Todd Romero Date: 8/22/07

Title: Director of Operations

KB LABS, INC.

DATA REPORT NARRATIVE

Client:	Tetra Tech NUS	**Driller/Sampler:**	TtNUS	**Analyst:**	Yael Hoogland
Site:	NS Mayport CTO303	**KB Labs Project Manager:**	Kelly Bergdoll	**KB Labs Project #:**	03-68
Onsite Dates:	08/11/03-08/14/03	**Client Project Manager:**	Mark Peterson	**Matrix:**	Water/Soil

1. All samples have been reviewed and, if required, updated in the Final Data Report for rounding and significant figures.

2. All sample results for 1-methylnaphthalene and 2-methylnaphthalene were transposed in the Preliminary Field Results.

Signature: ______________________

Title: Director of Operations

Date: 8/22/03

KB LABS, INC.

Table 1: Analytical Run Sequence/Surrogate Percent Recoveries

Client: Tetra Tech NUS	**Driller/Sampler**: TtNUS	**Analyst:** Yael Hoogland
Site: NS Mayport CTO 303	**KB Labs Project Manager**: Kelly Bergdoll	**KB Labs Project No:** 03-68
On-site Dates: 08/11/03-08/14/03	**Client Project Manager**: Mark Peterson	**Matrix:** Water/Soil

Sample ID	Date of Analysis	Surrogate % Recovery				Surrogate Control Limits: 80%(LCL) to 120%(UCL)			
		S1*	S2*	S3*	S4*	S1*	S2*	S3*	S4*
BLANK	08/10/03	93	92	101	100	Pass	Pass	Pass	Pass
BFB	08/10/03	98	104	99	101	Pass	Pass	Pass	Pass
VSTD01	08/10/03	98	97	100	101	Pass	Pass	Pass	Pass
VSTD05	08/10/03	88	92	101	101	Pass	Pass	Pass	Pass
VSTD10	08/10/03	101	104	101	102	Pass	Pass	Pass	Pass
VSTD20	08/10/03	112	107	98	98	Pass	Pass	Pass	Pass
VSTD100	08/10/03	101	99	100	98	Pass	Pass	Pass	Pass
BLANK	08/10/03	102	102	100	101	Pass	Pass	Pass	Pass
LCS	08/10/03	99	102	101	101	Pass	Pass	Pass	Pass
BLANK	08/11/03	92	100	102	102	Pass	Pass	Pass	Pass
BFB	08/11/03	111	104	102	107	Pass	Pass	Pass	Pass
VSTD20	08/11/03	98	105	106	107	Pass	Pass	Pass	Pass
LCS	08/11/03	100	102	102	105	Pass	Pass	Pass	Pass
BLANK	08/11/03	101	101	99	103	Pass	Pass	Pass	Pass
MWXI SITE 1241	08/11/03	96	100	96	103	Pass	Pass	Pass	Pass
PZ-2 SITE 1241	08/11/03	104	103	97	103	Pass	Pass	Pass	Pass
PZ-3 SITE 1241	08/11/03	109	110	99	101	Pass	Pass	Pass	Pass
SB-1 3'	08/11/03	96	98	98	109	Pass	Pass	Pass	Pass
SB-1 Dil 1:100	08/11/03	97	99	101	100	Pass	Pass	Pass	Pass
SB-2 1' RERAN	08/11/03	121	101	108	232	> UCL	Pass	Pass	> UCL
SB-3 3'	08/11/03	102	100	99	112	Pass	Pass	Pass	Pass
SB-1 RE	08/11/03	108	107	99	102	Pass	Pass	Pass	Pass
SB-3	08/11/03	104	107	99	100	Pass	Pass	Pass	Pass
SB-2 1" 1:200 RE	08/11/03	100	99	96	117	Pass	Pass	Pass	Pass
SB-2 1:10	08/11/03	105	106	98	120	Pass	Pass	Pass	Pass
SB-4 1:10	08/11/03	102	107	97	105	Pass	Pass	Pass	Pass
SB-5	08/11/03	107	108	99	113	Pass	Pass	Pass	Pass
SB-5 3"	08/11/03	111	107	101	112	Pass	Pass	Pass	Pass
CCS 12	08/11/03	105	104	98	105	Pass	Pass	Pass	Pass
SB-6 3'	08/11/03	103	111	107	132	Pass	Pass	Pass	> UCL
SB-6	08/11/03	96	105	102	112	Pass	Pass	Pass	Pass
SB-6MS	08/11/03	105	112	100	109	Pass	Pass	Pass	Pass
SB-6MSD	08/11/03	112	110	98	106	Pass	Pass	Pass	Pass
CCS	08/11/03	104	105	98	105	Pass	Pass	Pass	Pass

***Surrogate Compounds:**
S1 = 1,2- Dichloroethane-D4
S2 = 1,2-Difluorobenzene
S3 = Toluene-D8
S4 = 4-Bromofluorobenzene

Table 1: Analytical Run Sequence/Surrogate Percent Recoveries

Client: Tetra Tech NUS	**Driller/Sampler**: TtNUS	**Analyst:** Yael Hoogland
Site: NS Mayport CTO 303	**KB Labs Project Manager**: Kelly Bergdoll	**KB Labs Project No:** 03-68
On-site Dates: 08/11/03-08/14/03	**Client Project Manager**: Mark Peterson	**Matrix:** Water/Soil

Sample ID	Date of Analysis	Surrogate % Recovery				Surrogate Control Limits: 80%(LCL) to 120%(UCL)			
		S1*	S2*	S3*	S4*	S1*	S2*	S3*	S4*
BLANK	08/12/03	110	104	97	112	Pass	Pass	Pass	Pass
BFB	08/12/03	99	107	99	100	Pass	Pass	Pass	Pass
VSTD20	08/12/03	103	105	99	106	Pass	Pass	Pass	Pass
LCS	08/12/03	109	104	96	103	Pass	Pass	Pass	Pass
BLANK	08/12/03	105	110	97	104	Pass	Pass	Pass	Pass
SB-3 3' RE	08/12/03	109	110	103	123	Pass	Pass	Pass	> UCL
SB-4 3'	08/12/03	95	103	102	106	Pass	Pass	Pass	Pass
SB-7 1'	08/12/03	110	108	100	107	Pass	Pass	Pass	Pass
SB-7	08/12/03	108	107	98	106	Pass	Pass	Pass	Pass
SB-8	08/12/03	102	107	98	106	Pass	Pass	Pass	Pass
SB-8 1'	08/12/03	98	97	98	112	Pass	Pass	Pass	Pass
SB-9 1'	08/12/03	107	109	102	115	Pass	Pass	Pass	Pass
SB-10	08/12/03	108	105	96	106	Pass	Pass	Pass	Pass
SB-10 3'	08/12/03	120	113	96	105	Pass	Pass	Pass	Pass
SB-11 20'	08/12/03	108	106	95	104	Pass	Pass	Pass	Pass
SB-11 30'	08/12/03	98	101	97	102	Pass	Pass	Pass	Pass
SB-9 RE	08/12/03	116	104	97	101	Pass	Pass	Pass	Pass
SB-11 40'	08/12/03	94	97	96	105	Pass	Pass	Pass	Pass
X-2 SITE 1241	08/12/03	104	103	96	100	Pass	Pass	Pass	Pass
X-3 SITE 1241	08/12/03	113	110	95	104	Pass	Pass	Pass	Pass
PZ-1 SITE 1241	08/12/03	113	112	94	103	Pass	Pass	Pass	Pass
PZ-2 SITE 1241	08/12/03	102	107	97	104	Pass	Pass	Pass	Pass
PZ-3 SITE 1241	08/12/03	107	101	94	106	Pass	Pass	Pass	Pass
SB-11 40'MS	08/12/03	96	105	98	108	Pass	Pass	Pass	Pass
SB-11 40'MSD	08/12/03	105	110	97	101	Pass	Pass	Pass	Pass
SB-13	08/12/03	104	108	103	116	Pass	Pass	Pass	Pass
SB-15	08/12/03	107	104	101	105	Pass	Pass	Pass	Pass
SB-12	08/12/03	106	105	100	109	Pass	Pass	Pass	Pass
SB-14 MED 1:200	08/12/03	108	104	98	116	Pass	Pass	Pass	Pass
CCS	08/12/03	111	112	96	103	Pass	Pass	Pass	Pass
BLANK	08/13/03	118	107	94	106	Pass	Pass	Pass	Pass
BFB	08/13/03	107	107	98	104	Pass	Pass	Pass	Pass
VSTD20	08/13/03	113	109	96	108	Pass	Pass	Pass	Pass
LCS	08/13/03	112	108	94	104	Pass	Pass	Pass	Pass

***Surrogate Compounds:**
S1 = 1,2- Dichloroethane-D4
S2 = 1,2-Difluorobenzene
S3 = Toluene-D8
S4 = 4-Bromofluorobenzene

Table 1: Analytical Run Sequence/Surrogate Percent Recoveries

Client: Tetra Tech NUS	**Driller/Sampler**: TtNUS	**Analyst:** Yael Hoogland
Site: NS Mayport CTO 303	**KB Labs Project Manager**: Kelly Bergdoll	**KB Labs Project No:** 03-68
On-site Dates: 08/11/03-08/14/03	**Client Project Manager**: Mark Peterson	**Matrix:** Water/Soil

Sample ID	Date of Analysis	Surrogate % Recovery				Surrogate Control Limits: 80%(LCL) to 120%(UCL)			
		S1*	S2*	S3*	S4*	S1*	S2*	S3*	S4*
BLANK	08/13/03	107	109	98	108	Pass	Pass	Pass	Pass
SB4-5'	08/13/03	86	100	100	106	Pass	Pass	Pass	Pass
SB4	08/13/03	102	100	97	105	Pass	Pass	Pass	Pass
SB5-9'	08/13/03	96	99	97	107	Pass	Pass	Pass	Pass
SB5 1:10	08/13/03	95	101	95	106	Pass	Pass	Pass	Pass
SB6	08/13/03	97	99	94	105	Pass	Pass	Pass	Pass
SB6-1'	08/13/03	95	94	100	114	Pass	Pass	Pass	Pass
SB7	08/13/03	100	99	95	100	Pass	Pass	Pass	Pass
SB7-9'	08/13/03	95	94	95	103	Pass	Pass	Pass	Pass
SB8-9'	08/13/03	102	100	95	100	Pass	Pass	Pass	Pass
SB9-1'	08/13/03	91	91	94	101	Pass	Pass	Pass	Pass
SB9	08/13/03	116	109	94	102	Pass	Pass	Pass	Pass
SB8 RE	08/13/03	112	101	92	100	Pass	Pass	Pass	Pass
SB10	08/13/03	113	103	94	104	Pass	Pass	Pass	Pass
SB10-9'	08/13/03	103	98	96	102	Pass	Pass	Pass	Pass
SB10MS	08/13/03	105	104	94	100	Pass	Pass	Pass	Pass
SB10MSD	08/13/03	106	96	96	102	Pass	Pass	Pass	Pass
CCS	08/13/03	99	96	94	105	Pass	Pass	Pass	Pass
BFB	08/14/03	84	94	101	101	Pass	Pass	Pass	Pass
VSTD20	08/14/03	104	100	98	104	Pass	Pass	Pass	Pass
LCS	08/14/03	100	104	98	107	Pass	Pass	Pass	Pass
BLANK	08/14/03	113	107	98	104	Pass	Pass	Pass	Pass
SB-11	08/14/03	104	102	95	108	Pass	Pass	Pass	Pass
SB-11 9'	08/14/03	106	108	96	105	Pass	Pass	Pass	Pass
SB-12	08/14/03	116	108	93	108	Pass	Pass	Pass	Pass
SB12-9'	08/14/03	112	107	95	104	Pass	Pass	Pass	Pass
SB-13-9'	08/14/03	114	108	96	104	Pass	Pass	Pass	Pass
SB-13	08/14/03	110	103	93	99	Pass	Pass	Pass	Pass
SB16 SITE 250	08/14/03	102	95	95	101	Pass	Pass	Pass	Pass
SB16-3'	08/14/03	106	104	97	100	Pass	Pass	Pass	Pass
SB17-3'	08/14/03	116	110	92	102	Pass	Pass	Pass	Pass
SB17	08/14/03	110	101	93	103	Pass	Pass	Pass	Pass
SB18	08/14/03	111	103	94	112	Pass	Pass	Pass	Pass
SB18-3'	08/14/03	101	100	95	118	Pass	Pass	Pass	Pass

***Surrogate Compounds:**
S1 = 1,2- Dichloroethane-D4
S2 = 1,2-Difluorobenzene
S3 = Toluene-D8
S4 = 4-Bromofluorobenzene

Table 1: Analytical Run Sequence/Surrogate Percent Recoveries

Client: Tetra Tech NUS	**Driller/Sampler**: TtNUS	**Analyst:** Yael Hoogland
Site: NS Mayport CTO 303	**KB Labs Project Manager**: Kelly Bergdoll	**KB Labs Project No:** 03-68
On-site Dates: 08/11/03-08/14/03	**Client Project Manager**: Mark Peterson	**Matrix:** Water/Soil

Sample ID	Date of Analysis	Surrogate % Recovery				Surrogate Control Limits: 80%(LCL) to 120%(UCL)			
		S1*	S2*	S3*	S4*	S1*	S2*	S3*	S4*
SB19	08/14/03	108	106	92	102	Pass	Pass	Pass	Pass
SB20	08/14/03	108	105	95	102	Pass	Pass	Pass	Pass
SB20-3'	08/14/03	106	95	104	122	Pass	Pass	Pass	> UCL
SB19MS	08/14/03	94	97	95	100	Pass	Pass	Pass	Pass
SB19MSD	08/14/03	115	105	92	105	Pass	Pass	Pass	Pass
CCS	08/14/03	111	107	94	101	Pass	Pass	Pass	Pass
SB19-3'RE	08/14/03	105	99	96	110	Pass	Pass	Pass	Pass
Comments:	Although some surrogates may be out of the control percent recovery range (80% to 120%), other supporting QC, such as matrix spikes, matrix spike duplicates, method blanks, and laboratory control samples, are performed by KB Labs to further validate								

Signature: Todd Romero

Title: Director of Operations

Date: 8/22/03

***Surrogate Compounds:**

S1 = 1,2- Dichloroethane-D4
S2 = 1,2-Difluorobenzene
S3 = Toluene-D8
S4 = 4-Bromofluorobenzene

KB LABS, INC.

Table 2: VOC Spike Compound Percent Recoveries

Client: Tetra Tech NUS	**Driller/Sampler**: TtNUS	**Analyst:** Yael Hoogland
Site: NS Mayport CTO 303	**KB Labs Project Manager:** Kelly Bergdoll	**KB Labs Project No.:** 03-68
On-site Dates: 08/11/03-08/14/03	**Client Project Manager:** Mark Peterson	**Matrix**: Water/Soil

Matrix Spike/Matrix Spike Duplicate (MS/MSD):

Samples: SB-6MS, SB-6MSD — **Date of Analysis:** 8/11/2003

Matrix Spike Compounds	Control Limits			Percent Recoveries			Control Limit Checks		
	Lower	Upper	RPD	MS	MSD	RPD	MS	MSD	RPD
MTBE	57	175	20	118	118	0	Pass	Pass	Pass
Benzene	63	135	20	105	106	1	Pass	Pass	Pass
Toluene	66	130	20	101	103	2	Pass	Pass	Pass
2-Methyl Naphthalene	53	147	20	79	90	12	Pass	Pass	Pass
1-Methyl Naphthalene	61	139	20	83	94	12	Pass	Pass	Pass
Ethylbenzene	64	136	20	100	103	2	Pass	Pass	Pass
m,p-Xylene	55	143	20	101	104	3	Pass	Pass	Pass
o-Xylene	62	136	20	104	107	3	Pass	Pass	Pass
Naphthalene	0	233	20	93	96	3	Pass	Pass	Pass

Note: Control Limits are based on a semi-annual historical evaluation of mobile unit.

Samples: SB-11 40'MSD, SB-11 40'MSD — **Date of Analysis:** 8/12/2003

Matrix Spike Compounds	Control Limits			Percent Recoveries			Control Limit Checks		
	Lower	Upper	RPD	MS	MSD	RPD	MS	MSD	RPD
MTBE	57	175	20	110	116	6	Pass	Pass	Pass
Benzene	63	135	20	96	109	13	Pass	Pass	Pass
Toluene	66	130	20	101	106	4	Pass	Pass	Pass
2-Methyl Naphthalene	53	147	20	92	49	62	Pass	< LCL	> RPDL
1-Methyl Naphthalene	61	139	20	100	58	53	Pass	< LCL	> RPDL
Ethylbenzene	64	136	20	102	107	5	Pass	Pass	Pass
m,p-Xylene	55	143	20	104	103	2	Pass	Pass	Pass
o-Xylene	62	136	20	105	101	4	Pass	Pass	Pass
Naphthalene	0	233	20	89	72	21	Pass	Pass	> RPDL

Note: Control Limits are based on a semi-annual historical evaluation of mobile unit.

KB LABS, INC.

Table 2: VOC Spike Compound Percent Recoveries

Client: Tetra Tech NUS	**Driller/Sampler:** TtNUS	**Analyst:** Yael Hoogland
Site: NS Mayport CTO 303	**KB Labs Project Manager:** Kelly Bergdoll	**KB Labs Project No.:** 03-68
On-site Dates: 08/11/03-08/14/03	**Client Project Manager:** Mark Peterson	**Matrix:** Water/Soil

Samples: SB10 MS, SB10 MSD — **Date of Analysis:** 8/13/2003

Matrix Spike Compounds	Control Limits			Percent Recoveries			Control Limit Checks		
	Lower	Upper	RPD	MS	MSD	RPD	MS	MSD	RPD
MTBE	57	175	20	130	121	7	Pass	Pass	Pass
Benzene	63	135	20	102	95	6	Pass	Pass	Pass
Toluene	66	130	20	95	97	2	Pass	Pass	Pass
2-Methyl Naphthalene	53	147	20	90	106	16	Pass	Pass	Pass
1-Methyl Naphthalene	61	139	20	102	115	12	Pass	Pass	Pass
Ethylbenzene	64	136	20	97	100	4	Pass	Pass	Pass
m,p-Xylene	55	143	20	87	89	3	Pass	Pass	Pass
o-Xylene	62	136	20	91	94	4	Pass	Pass	Pass
Naphthalene	0	233	20	100	113	12	Pass	Pass	Pass

Note: Control Limits are based on a semi-annual historical evaluation of mobile unit.

Samples: SB19 MS, SB19 MSD — **Date of Analysis:** 8/14/2003

Matrix Spike Compounds	Control Limits			Percent Recoveries			Control Limit Checks		
	Lower	Upper	RPD	MS	MSD	RPD	MS	MSD	RPD
MTBE	57	175	20	111	131	17	Pass	Pass	Pass
Benzene	63	135	20	93	105	12	Pass	Pass	Pass
Toluene	66	130	20	101	98	3	Pass	Pass	Pass
2-Methyl Naphthalene	53	147	20	100	108	8	Pass	Pass	Pass
1-Methyl Naphthalene	61	139	20	104	110	6	Pass	Pass	Pass
Ethylbenzene	64	136	20	103	101	2	Pass	Pass	Pass
m,p-Xylene	55	143	20	91	88	4	Pass	Pass	Pass
o-Xylene	62	136	20	93	94	1	Pass	Pass	Pass
Naphthalene	0	233	20	99	108	8	Pass	Pass	Pass

Note: Control Limits are based on a semi-annual historical evaluation of mobile unit.

KB LABS, INC.

Table 2: VOC Spike Compound Percent Recoveries

Client: Tetra Tech NUS	**Driller/Sampler**: TtNUS	**Analyst:** Yael Hoogland
Site: NS Mayport CTO 303	**KB Labs Project Manager:** Kelly Bergdoll	**KB Labs Project No.:** 03-68
On-site Dates: 08/11/03-08/14/03	**Client Project Manager:** Mark Peterson	**Matrix**: Water/Soil

Laboratory Control Spikes (LCS):

Samples: LCS 1, LCS 2, LCS 3 — **Date of Analysis:** 8/10/2003, 8/11/2003, 8/12/2003

Spike Compounds	Control Limits			Percent Recoveries			Control Limit Checks		
	Lower		Upper	LCS#1	LCS#2	LCS#3	LCS#1	LCS#2	LCS#3
MTBE	70	to	130	102	102	114	Pass	Pass	Pass
Benzene	70	to	130	104	105	111	Pass	Pass	Pass
Toluene	70	to	130	106	110	108	Pass	Pass	Pass
2-Methyl Naphthalene	70	to	130	22	108	88	< LCL	Pass	Pass
1-Methyl Naphthalene	70	to	130	25	104	92	< LCL	Pass	Pass
Ethylbenzene	70	to	130	105	109	110	Pass	Pass	Pass
m,p-Xylene	70	to	130	106	105	105	Pass	Pass	Pass
o-Xylene	70	to	130	106	108	105	Pass	Pass	Pass
Naphthalene	70	to	130	77	101	106	Pass	Pass	Pass

Note: Control limits are based on method guidance.

Samples: LCS 4, LCS 5 — **Date of Analysis:** 8/13/2003, 8/14/2003

Spike Compounds	Control Limits			Percent Recoveries			Control Limit Checks		
	Lower		Upper	LCS#4	LCS#5		LCS#4	LCS#5	
MTBE	70	to	130	122	118		Pass	Pass	
Benzene	70	to	130	117	109		Pass	Pass	
Toluene	70	to	130	109	117		Pass	Pass	
2-Methyl Naphthalene	70	to	130	115	110		Pass	Pass	
1-Methyl Naphthalene	70	to	130	111	108		Pass	Pass	
Ethylbenzene	70	to	130	114	118		Pass	Pass	
m,p-Xylene	70	to	130	110	111		Pass	Pass	
o-Xylene	70	to	130	114	112		Pass	Pass	
Naphthalene	70	to	130	113	96		Pass	Pass	

Note: Control limits are based on method guidance.

Signature: Todd Romer

Title: Director of Operations

Date: 8/22/03

KB LABS, INC.

Final Data Report

NS Mayport CTO 303 Site 250

Mayport, FL

Project Number 03-68

Prepared for : Tetra Tech NUS

Mobile Laboratory Services	Sample ID SB-1	Sample ID SB-2	Sample ID SB-3	Sample ID SB-4	Sample ID SB-5	Sample ID SB-6	Sample ID SB-7	Sample ID SB-8	Sample ID SB-9	Sample ID SB-10	Sample ID SB-11 20'
Analysis Date:	8/11/2003	8/11/2003	8/11/2003	8/11/2003	8/11/2003	8/11/2003	8/12/2003	8/12/2003	8/12/2003	8/12/2003	8/12/2003
Matrix:	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Dilution:	1 & 100	10	1	10	1	1	1	1	1, 10 & 50	1	1
MTBE	<5.0	<50	<5.0	<50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	<1.0	<10	<1.0	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	<1.0	<10	<1.0	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	<1.0	<10	<1.0	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylene	<1.0	<10	<1.0	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
o-Xylene	<1.0	<10	<1.0	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Naphthalene	**61.4**	100	<5.0	<50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
2-Methylnaphthalene	**105**	**690**	**13.3**	**82**	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1-Methylnaphthalene	**118**	**600**	**14.5**	**88**	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
TPH	**3.2**	**51**	**0.78**	**11**	**0.44**	ND	ND	ND	ND	ND	**0.54**

Volatiles Units: Waters are ug/L and soils are mg/kg.
TPH Units: Waters are mg/L and soils are mg/kg.
ND: No Volatile TPH Peaks Detected
NR: Volatile TPH Scan Not Requested

KB LABS, INC.

Final Data Report

NS Mayport CTO 303 Site 250

Mayport, FL

Project Number 03-68

Prepared for : Tetra Tech NUS

Mobile Laboratory Services	Sample ID SB-11 30'	Sample ID SB-11 40'	Sample ID SB-16	Sample ID SB-17	Sample ID SB-18	Sample ID SB-19	Sample ID SB-20	Sample ID SB-1 3'	Sample ID SB-2 1'	Sample ID SB-3 3'	Sample ID SB-4 3'
Analysis Date:	8/12/2003	8/12/2003	8/14/2003	8/14/2003	8/14/2003	8/14/2003	8/14/2003	8/11/2003	8/11/2003	8/12/2003	8/12/2003
Matrix:	Water	Water	Water	Water	Water	Water	Water	Soil	Soil	Soil	Soil
Dilution:	1	1	1	1	1	1	1	1	1 & 2	1	1
MTBE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<.050	<.050	<.050	<.050
Benzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<.0070	<.0070	<.0070	<.0070
Toluene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<.010	<.010	<.010	<.010
Ethylbenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<.010	<.010	<.010	<.010
m&p-Xylene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<.010	<.010	<.010	<.010
o-Xylene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<.010	<.010	<.010	<.010
Naphthalene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<.050	**15**	<.050	<.050
2-Methylnaphthalene	<5.0	<5.0	<5.0	<5.0	**36.0**	<5.0	**22.0**	<.050	**29**	<.050	<.050
1-Methylnaphthalene	<5.0	<5.0	<5.0	<5.0	**89.5**	<5.0	**47.3**	<.050	**27**	<.050	<.050
TPH	**0.68**	**0.56**	ND	ND	**8.2**	**0.58**	**1.8**	ND	**140**	ND	ND

Volatiles Units: Waters are ug/L and soils are mg/kg.
TPH Units: Waters are mg/L and soils are mg/kg.
ND: No Volatile TPH Peaks Detected
NR: Volatile TPH Scan Not Requested

KB LABS, INC.
Final Data Report
NS Mayport CTO 303 Site 250
Mayport, FL
Project Number 03-68

Prepared for : Tetra Tech NUS

Mobile Laboratory Services	Sample ID SB-5 3'	Sample ID SB-6 3'	Sample ID SB-7 1'	Sample ID SB-8 1'	Sample ID SB-9 1'	Sample ID SB-10 3'	Sample ID SB-12 1'	Sample ID SB-13 1'	Sample ID SB-14 1'	Sample ID SB-15 1'	Sample ID SB-16 3'
Analysis Date:	8/11/2003	8/11/2003	8/12/2003	8/12/2003	8/12/2003	8/12/2003	8/12/2003	8/12/2003	8/12/2003	8/12/2003	8/14/2003
Matrix:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Dilution:	1	1	1	1	1	1	1	1	1	1	1
MTBE	<.050	<.050	<.050	<.050	<.050	<.050	<.050	<.050	<1.0	<.050	<.050
Benzene	<.0070	<.0070	<.0070	<.0070	<.0070	<.0070	<.0070	<.0070	<0.14	<.0070	<.0070
Toluene	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<0.20	<.010	<.010
Ethylbenzene	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<0.20	<.010	<.010
m&p-Xylene	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<0.20	<.010	<.010
o-Xylene	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<0.20	<.010	<.010
Naphthalene	<.050	<.050	<.050	<.050	<.050	<.050	<.050	<.050	<1.0	<.050	<.050
2-Methylnaphthalene	<.050	<.050	<.050	<.050	<.050	<.050	**0.13**	<.050	**4.7**	<.050	<.050
1-Methylnaphthalene	<.050	<.050	<.050	<.050	<.050	<.050	**0.10**	<.050	**5.7**	<.050	<.050
TPH	**4.2**	ND	ND	ND	ND	ND	**5.3**	ND	**1300**	ND	ND

Volatiles Units: Waters are ug/L and soils are mg/kg.
TPH Units: Waters are mg/L and soils are mg/kg.
ND: No Volatile TPH Peaks Detected
NR: Volatile TPH Scan Not Requested

KB LABS, INC.

Final Data Report

NS Mayport CTO 303 Site 250

Mayport, FL

Project Number 03-68

Prepared for : Tetra Tech NUS

Mobile Laboratory Services	Sample ID SB-17 3'	Sample ID SB-18 3'	Sample ID SB-19 3'	Sample ID SB-20 3'	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
Analysis Date:	8/14/2003	8/14/2003	8/14/2003	8/14/2003							
Matrix:	Soil	Soil	Soil	Soil							
Dilution:	1	1	1	1							
MTBE	<.050	<.050	<.050	<.050							
Benzene	<.0070	<.0070	<.0070	<.0070							
Toluene	<.010	<.010	<.010	<.010							
Ethylbenzene	<.010	<.010	<.010	<.010							
m&p-Xylene	<.010	<.010	<.010	<.010							
o-Xylene	<.010	<.010	<.010	<.010							
Naphthalene	<.050	<.050	<.050	<.050							
2-Methylnaphthalene	<.050	<.050	<.050	**0.066**							
1-Methylnaphthalene	<.050	**0.080**	<.050	**0.41**							
TPH	ND	**11**	ND	**11**							

Volatiles Units: Waters are ug/L and soils are mg/kg.
TPH Units: Waters are mg/L and soils are mg/kg.
ND: No Volatile TPH Peaks Detected
NR: Volatile TPH Scan Not Requested

KB LABS
Mobile Laboratory Services
6821 SW Archer Road
Gainesville, FL 32608
TEL (352) 367-0073
FAX (352) 367-0074

CHAIN-OF-CUSTODY RECORD

MOBILE UNIT #: KB1

CLIENT NAME: Tetra Tech

PROJECT NAME & ADDRESS: Site 250 Mayport CTO303 JJY

SAMPLERS:

CONTACT PERSON: Dave

BATCH # (Lab Use Only):

PRESERVATION: C Chilled; H HCL; Ot Other (see Remarks)

IDENTIFY PARAMETERS DESIRED AND NO. OF CONTAINERS

SAMPLE FIELD ID.\ NUMBER	DATE SAMPLED	TIME SAMPLED	COMP.	GRAB	DATE REC'D	TIME REC'D	STATION LOCATION / No.	SAMPLE MATRIX	NUMBER OF CONTAINERS	VOLATILES				COMMENT
SB-1	081103	1448		✓	081103	1445		GW	2	✓				pH 6 Very strong odor - screen relatively clean
SB-1 3'		1430		✓		1445		S	1					1.02 g
SB-2 1'		1500		✓		1510		S	1					1.00 g 5.05g/5ml Me
SB-3 3'		1538		✓		1545		S	1					1.01 g
SB-3		1550		✓		1555		GW	2					pH 6
SB-2		1610		✓		1620		GW	2					pH 6
SB-4 3'		1620		✓		1620		S	1					1.03 g
SB-4		1640		✓		1650		GW	2					pH 6
SB 5 3'		1655		✓		1700		S	1					0.99 g
SB 5		1710		✓		1715		GW	2					pH 6
SB6- 3'		1725		✓		1740		S	1					1.08 g
SB6		1750		✓		1755		GW	2					pH 6 MS/MSD

Precleaned Containers Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Remarks and Observations
[signature]	081103	[signature]		15 samples Total
Relinquished by: (Signature) [signature]	Date / Time	Received by: (Signature) [signature]	Date / Time 081103	pg 2 of 2

Matrix Types S Soil SW Surface Water GW Ground Water SG Soil Gas

KB LABS
Mobile Laboratory Services
6821 SW Archer Road
Gainesville, FL 32608
TEL (352) 367-0073
FAX (352) 367-0074

CHAIN-OF-CUSTODY RECORD

MOBILE UNIT # KB 1

CLIENT NAME	PROJECT NAME & ADDRESS
TetraTech	Mayport NS Site 250
SAMPLERS	CONTACT PERSON: Dave

BATCH # (Lab Use Only)

IDENTIFY PARAMETERS DESIRED AND NO. OF CONTAINERS: VOLATILES

PRESERVATION: C Chilled; H HCL; Ot Other (see Remarks)

SAMPLE FIELD ID.\ NUMBER	DATE SAMPLED	TIME SAMPLED	COMP.	GRAB	DATE REC'D	TIME REC'D	STATION LOCATION / No.	SAMPLE MATRIX	NUMBER OF CONTAINERS	VOLATILES				COMMENT
SB-7 1'	081203	0905		✓	081203	0910		S	1	✓				1.05 g
SB-7		0920				0930		GW	2	✓				pH 6
SB-8 1'		0946				1005		S	1	✓				.99
SB-8 ~~X~~		1000				1005		GW	2	✓				pH 6
SB-9 1'		1025				1037		S	1	✓				1.03 g
SB-9		1035				1037		GW	2	✓				pH 6
SB-10		1100				1110		GW	2	✓				pH 6
SB 10 3'		1050				1120		S	1	✓				1.00 g
SB 11 20' GW		1400				1400		GW	2	✓				pH 6
SB 11 30' GW		N.R.				1528		GW	2	✓				pH 6
SB 11 40' GW		1640				1645		GW	2	✓				pH 6
SB-12 1'		NR.				1800		S	1	✓				1.05 g
-13 1'														1.06 g
-14 1'														5.01 g / 10 ml MeOH 10 min. [illegible]
-15 1'														0.98 g

Precleaned Containers Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Remarks and Observations
Relinquished by: (Signature) [signature]	Date / Time	Received by: (Signature) [signature]	Date / Time 081203	pg 1 of 2

Matrix Types S Soil SW Surface Water GW Ground Water SG Soil Gas

CHAIN-OF-CUSTODY RECORD

Kb LABS Inc
Mobile Laboratory Services
6821 SW Archer Road
Gainesville, FL 32608
TEL (352) 367-0073
FAX (352) 367-0074

MOBILE UNIT # KB 1.

CLIENT NAME	PROJECT NAME & ADDRESS
TetraTech	Mayport Site 250
SAMPLERS	**CONTACT PERSON**
Partridge	Dave

BATCH # (Lab Use Only)

PRESERVATION: C Chilled; H HCL; Ot Other (see Remarks)

IDENTIFY PARAMETERS DESIRED AND NO. OF CONTAINERS

SAMPLE FIELD ID.\ NUMBER	DATE SAMPLED	TIME SAMPLED	COMP.	GRAB	DATE REC'D	TIME REC'D	STATION LOCATION / No.	SAMPLE MATRIX	NUMBER OF CONTAINERS	VOLATILES				COMMENT
SB 16 3'	081403	1340			081403	1350		S	1	✓				1.09g
SB 16		1350				1350		GW	2	✓				pH 6
SB 17 3'		1355				1405		S	1	✓				1.05g
SB 17		1425				1425		GW	2	✓				pH 6
SB 18 -3'		1430				1435		S	1	✓				1.05g
SB 18		1500				1500		GW	2	✓				pH 6
SB 19		1550				1555		GW	2	✓				pH 6
SB 20-3'		1600				1610		S	1	✓				0.98g
SB 20		1610				1610		GW	2	✓				pH 6
SB 19 3'		1555				1555		S	1	✓				1.02g

Precleaned Containers Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Date / Time
Relinquished by: *(Signature)*	**Date / Time**	**Received by:** *(Signature)*	**Date / Time**
[signature]	08/14/03	[signature]	08/14/03

Remarks and Observations

16 samples

19 2 of 2

Matrix Types S Soil SW Surface Water GW Ground Water SG Soil Gas

APPENDIX J

FIXED-BASE LABORATORY SOIL ANALYTICAL RESULTS

CLIENT : Tetra Tech NUS	**REPORT #** : JAX33667
ADDRESS: 8640 Philips Highway	**DATE SUBMITTED**: August 15, 2003
Suite 16	**DATE REPORTED** : August 27, 2003
Jacksonville, FL 32256	

ATTENTION: Mr. D. Siefkend

SAMPLE IDENTIFICATION

Samples submitted and
identified by client as:

REFERENCE: CTO303 SITE 250

5863

08/15/03

JAX33667-1 : MPT-250-SB 2 (1) @ 08:15
JAX33667-2 : MPT-250-SB 14 (1) @ 09:00
JAX33667-3 : MPT-250-SB 18 (3) @ 09:50

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. This data has been produced in accordance with NELAC Standards (July, 1999). This report shall not be reproduced except in full, without the written approval of the laboratory. Results for these procedures apply only to the samples as submitted.

Note: Analytical values are reported on a dry weight basis.

PROJECT MANAGER ______________________________
Christopher K. Devore

ENCO LABORATORIES
REPORT # : JAX33667
DATE REPORTED: August 27, 2003
REFERENCE : CTO303 SITE 250
PROJECT NAME : 5863

RESULTS OF ANALYSIS

EPA METHOD 8260 - VOLATILE ORGANICS	MPT-250-SB 2 (1)	Units
Methyl tert-butyl ether	110 U D1	ug/Kg
Benzene	110 U D1	ug/Kg
Toluene	110 U D1	ug/Kg
Chlorobenzene	110 U D1	ug/Kg
Ethylbenzene	110 U D1	ug/Kg
m-Xylene & p-Xylene	220 U D1	ug/Kg
o-Xylene	110 U D1	ug/Kg
1,3-Dichlorobenzene	110 U D1	ug/Kg
1,4-Dichlorobenzene	110 U D1	ug/Kg
1,2-Dichlorobenzene	110 U D1	ug/Kg
Surrogate:	**% RECOV**	**LIMITS**
Dibromofluoromethane	97	61-128
D8-Toluene	98	77-119
Bromofluorobenzene	146	60-130
Date Analyzed	08/21/03 04:29	

U = Compound was analyzed for but not detected to the level shown.
D1 = Analyte value determined from a 1:103 dilution.

ENCO LABORATORIES
REPORT # : JAX33667
DATE REPORTED: August 27, 2003
REFERENCE : CTO303 SITE 250
PROJECT NAME : 5863

RESULTS OF ANALYSIS

EPA METHOD 8260 - VOLATILE ORGANICS	MPT-250-SB 2 (1)	Units
Dichlorodifluoromethane	220 U D1	ug/Kg
Chloromethane	110 U D1	ug/Kg
Vinyl Chloride	110 U D1	ug/Kg
Bromomethane	110 U D1	ug/Kg
Chloroethane	110 U D1	ug/Kg
Trichlorofluoromethane	110 U D1	ug/Kg
1,1-Dichloroethene	110 U D1	ug/Kg
Methylene Chloride	1100 U D1	ug/Kg
t-1,2-Dichloroethene	110 U D1	ug/Kg
1,1-Dichloroethane	110 U D1	ug/Kg
c-1,2-Dichloroethene	110 U D1	ug/Kg
Chloroform	110 U D1	ug/Kg
1,1,1-Trichloroethane	110 U D1	ug/Kg
Carbon tetrachloride	110 U D1	ug/Kg
1,2-Dichloroethane	110 U D1	ug/Kg
Trichloroethene	110 U D1	ug/Kg
1,2-Dichloropropane	110 U D1	ug/Kg
Bromodichloromethane	110 U D1	ug/Kg
c-1,3-Dichloropropene	110 U D1	ug/Kg
t-1,3-Dichloropropene	110 U D1	ug/Kg
1,1,2-Trichloroethane	110 U D1	ug/Kg
Tetrachloroethene	330 U D1	ug/Kg
Dibromochloromethane	110 U D1	ug/Kg
Chlorobenzene	110 U D1	ug/Kg
Bromoform	110 U D1	ug/Kg
1,1,2,2-Tetrachloroethane	110 U D1	ug/Kg
1,3-Dichlorobenzene	110 U D1	ug/Kg
1,4-Dichlorobenzene	110 U D1	ug/Kg
1,2-Dichlorobenzene	110 U D1	ug/Kg

Surrogate:	% RECOV	LIMITS
Dibromofluoromethane	97	61-128
D8-Toluene	98	77-119
Bromofluorobenzene	146	60-130
Date Analyzed	08/21/03 04:29	

U = Compound was analyzed for but not detected to the level shown.
D1 = Analyte value determined from a 1:103 dilution.

ENCO LABORATORIES
REPORT # : JAX33667
DATE REPORTED: August 27, 2003
REFERENCE : CTO303 SITE 250
PROJECT NAME : 5863

RESULTS OF ANALYSIS

EPA METHOD 8270 -

PAH Compounds by SIM	MPT-250-SB 2 (1)				Units
Naphthalene 270/40/1.7	**4700**		D2	15000	ug/Kg
2-Methylnaphthalene 560/80/6.1	**62000**		D2	29000	ug/Kg
1-Methylnaphthalene 470/68/2.2	**54000**		D2	27000	ug/Kg
Acenaphthylene 11000/1100.27	**500**		D3		ug/Kg
Acenaphthene 18000.1900.2.1	**1500**		D3		ug/Kg
Fluorene 28000.2200.160	**580**		D3		ug/Kg
Phenanthrene 30000.2000.250	**71**		D3		ug/Kg
Anthracene 260000.18000.2500	35	U	D3		ug/Kg
Fluoranthene 48000.2900.1200	35	U	D3		ug/Kg
Pyrene 37000.2200.880	35	U	D3		ug/Kg
Chrysene	35	U	D3		ug/Kg
Benzo(a)anthracene	35	U	D3		ug/Kg
Benzo(b)fluoranthene	35	U	D3		ug/Kg
Benzo(k)fluoranthene	35	U	D3		ug/Kg
Benzo(a)pyrene	35	U	D3		ug/Kg
Indeno(1,2,3-cd)pyrene	35	U	D3		ug/Kg
Dibenzo(a,h)anthracene	35	U	D3		ug/Kg
Benzo(g,h,i)perylene	35	U	D3		ug/Kg

Surrogate:	% RECOV	LIMITS
p-Terphenyl	106	19-162
Date Prepared	08/20/03	
Date Analyzed	08/22/03 15:32	

U = Compound was analyzed for but not detected to the level shown.
D2 = Analyte value determined from a 1:200 dilution.
D3 = Analyte value determined from a 1:10 dilution.

ENCO LABORATORIES
REPORT # : JAX33667
DATE REPORTED: August 27, 2003
REFERENCE : CTO303 SITE 250
PROJECT NAME : 5863

RESULTS OF ANALYSIS

Miscellaneous	METHOD	MPT-250-SB 2 (1)		Units
Percent Solids	WETS/31	**93**		%
Date Prepared		08/17/03 21:00		
Date Analyzed		08/18/03 13:00		

EPA METHOD FLPRO - PETROL. RESIDUAL ORG.	MPT-250-SB 2 (1)		Units
Hydrocarbons (C8-C40)	**8100**	D3	mg/Kg

Surrogate:	% RECOV	LIMITS
o-Terphenyl	*	51-148
Nonatriacontane	*	36-152
Date Prepared	08/18/03	
Date Analyzed	08/20/03 21:16	

* = Surrogate recovery unavailable due to sample dilution.
U = Compound was analyzed for but not detected to the level shown.
D3 = Analyte value determined from a 1:10 dilution.

RESULTS OF ANALYSIS

EPA METHOD 8260 - VOLATILE ORGANICS	MPT-250-SB 14 (1)	Units
Methyl tert-butyl ether	130 U D4	ug/Kg
Benzene	130 U D4	ug/Kg
Toluene	130 U D4	ug/Kg
Chlorobenzene	130 U D4	ug/Kg
Ethylbenzene	130 U D4	ug/Kg
m-Xylene & p-Xylene	260 U D4	ug/Kg
o-Xylene	130 U D4	ug/Kg
1,3-Dichlorobenzene	130 U D4	ug/Kg
1,4-Dichlorobenzene	130 U D4	ug/Kg
1,2-Dichlorobenzene	130 U D4	ug/Kg
Surrogate:	**% RECOV**	**LIMITS**
Dibromofluoromethane	101	61-128
D8-Toluene	98	77-119
Bromofluorobenzene	93	60-130
Date Analyzed	08/21/03 03:18	

U = Compound was analyzed for but not detected to the level shown.
D4 = Analyte value determined from a 1:122 dilution.

ENCO LABORATORIES
REPORT # : JAX33667
DATE REPORTED: August 27, 2003
REFERENCE : CTO303 SITE 250
PROJECT NAME : 5863

RESULTS OF ANALYSIS

EPA METHOD 8260 - VOLATILE ORGANICS	MPT-250-SB 14 (1)	Units
Dichlorodifluoromethane	260 U D4	ug/Kg
Chloromethane	130 U D4	ug/Kg
Vinyl Chloride	130 U D4	ug/Kg
Bromomethane	130 U D4	ug/Kg
Chloroethane	130 U D4	ug/Kg
Trichlorofluoromethane	130 U D4	ug/Kg
1,1-Dichloroethene	130 U D4	ug/Kg
Methylene Chloride	1300 U D4	ug/Kg
t-1,2-Dichloroethene	130 U D4	ug/Kg
1,1-Dichloroethane	130 U D4	ug/Kg
c-1,2-Dichloroethene	130 U D4	ug/Kg
Chloroform	130 U D4	ug/Kg
1,1,1-Trichloroethane	130 U D4	ug/Kg
Carbon tetrachloride	130 U D4	ug/Kg
1,2-Dichloroethane	130 U D4	ug/Kg
Trichloroethene	130 U D4	ug/Kg
1,2-Dichloropropane	130 U D4	ug/Kg
Bromodichloromethane	130 U D4	ug/Kg
c-1,3-Dichloropropene	130 U D4	ug/Kg
t-1,3-Dichloropropene	130 U D4	ug/Kg
1,1,2-Trichloroethane	130 U D4	ug/Kg
Tetrachloroethene	380 U D4	ug/Kg
Dibromochloromethane	130 U D4	ug/Kg
Chlorobenzene	130 U D4	ug/Kg
Bromoform	130 U D4	ug/Kg
1,1,2,2-Tetrachloroethane	130 U D4	ug/Kg
1,3-Dichlorobenzene	130 U D4	ug/Kg
1,4-Dichlorobenzene	130 U D4	ug/Kg
1,2-Dichlorobenzene	130 U D4	ug/Kg

Surrogate:	% RECOV	LIMITS
Dibromofluoromethane	101	61-128
D8-Toluene	98	77-119
Bromofluorobenzene	93	60-130
Date Analyzed	08/21/03 03:18	

U = Compound was analyzed for but not detected to the level shown.
D4 = Analyte value determined from a 1:122 dilution.

ENCO LABORATORIES
REPORT # : JAX33667
DATE REPORTED: August 27, 2003
REFERENCE : CTO303 SITE 250
PROJECT NAME : 5863

RESULTS OF ANALYSIS

EPA METHOD 8270 - PAH Compounds by SIM	MPT-250-SB 14 (1)				Units
Naphthalene	**270**		D3	<1000	ug/Kg
2-Methylnaphthalene	**4700**		D3	4700	ug/Kg
1-Methylnaphthalene	**6000**		D3	5700	ug/Kg
Acenaphthylene	35	U	D3		ug/Kg
Acenaphthene	**270**		D3		ug/Kg
Fluorene	**620**		D3		ug/Kg
Phenanthrene	**1000**		D3		ug/Kg
Anthracene	**200**		D3		ug/Kg
Fluoranthene	**73**		D3		ug/Kg
Pyrene	**190**		D3		ug/Kg
Chrysene	35	U	D3		ug/Kg
Benzo(a)anthracene	35	U	D3		ug/Kg
Benzo(b)fluoranthene	35	U	D3		ug/Kg
Benzo(k)fluoranthene	35	U	D3		ug/Kg
Benzo(a)pyrene	35	U	D3		ug/Kg
Indeno(1,2,3-cd)pyrene	35	U	D3		ug/Kg
Dibenzo(a,h)anthracene	35	U	D3		ug/Kg
Benzo(g,h,i)perylene	35	U	D3		ug/Kg

Surrogate:	% RECOV	LIMITS
p-Terphenyl	106	19-162
Date Prepared	08/20/03	
Date Analyzed	08/22/03 15:56	

U = Compound was analyzed for but not detected to the level shown.
D3 = Analyte value determined from a 1:10 dilution.

ENCO LABORATORIES
REPORT # : JAX33667
DATE REPORTED: August 27, 2003
REFERENCE : CTO303 SITE 250
PROJECT NAME : 5863

RESULTS OF ANALYSIS

Miscellaneous	METHOD	MPT-250-SB 14 (1)		Units
Percent Solids	WETS/31	95		%
Date Prepared		08/17/03 21:00		
Date Analyzed		08/18/03 13:00		

EPA METHOD FLPRO - PETROL. RESIDUAL ORG.	MPT-250-SB 14 (1)		Units
Hydrocarbons (C8-C40)	4000	D3	mg/Kg
Surrogate:	**% RECOV**		**LIMITS**
o-Terphenyl	*		51-148
Nonatriacontane	*		36-152
Date Prepared	08/18/03		
Date Analyzed	08/20/03 21:37		

* = Surrogate recovery unavailable due to sample dilution.
U = Compound was analyzed for but not detected to the level shown.
D3 = Analyte value determined from a 1:10 dilution.

ENCO LABORATORIES
REPORT # : JAX33667
DATE REPORTED: August 27, 2003
REFERENCE : CTO303 SITE 250
PROJECT NAME : 5863

RESULTS OF ANALYSIS

EPA METHOD 8260 - VOLATILE ORGANICS	**MPT-250-SB 18 (3)**	**Units**
Methyl tert-butyl ether	1.0 U D5	ug/Kg
Benzene	1.0 U D5	ug/Kg
Toluene	**2.8** D5	ug/Kg
Chlorobenzene	1.0 U D5	ug/Kg
Ethylbenzene	1.0 U D5	ug/Kg
m-Xylene & p-Xylene	2.3 U D5	ug/Kg
o-Xylene	1.0 U D5	ug/Kg
1,3-Dichlorobenzene	1.0 U D5	ug/Kg
1,4-Dichlorobenzene	1.0 U D5	ug/Kg
1,2-Dichlorobenzene	1.0 U D5	ug/Kg

Surrogate:	**% RECOV**	**LIMITS**
Dibromofluoromethane	146	61-128
D8-Toluene	112	77-119
Bromofluorobenzene	84	60-130
Date Prepared	08/15/03 17:00	
Date Analyzed	08/27/03 12:50	

U = Compound was analyzed for but not detected to the level shown.
D5 = Analyte value determined from a 1:1.04 dilution.

ENCO LABORATORIES
REPORT # : JAX33667
DATE REPORTED: August 27, 2003
REFERENCE : CTO303 SITE 250
PROJECT NAME : 5863

RESULTS OF ANALYSIS

EPA METHOD 8260 - VOLATILE ORGANICS	MPT-250-SB 18 (3)	Units
Dichlorodifluoromethane	2.3 U D5	ug/Kg
Chloromethane	1.0 U D5	ug/Kg
Vinyl Chloride	1.0 U D5	ug/Kg
Bromomethane	1.0 U D5	ug/Kg
Chloroethane	1.0 U D5	ug/Kg
Trichlorofluoromethane	1.0 U D5	ug/Kg
1,1-Dichloroethene	1.0 U D5	ug/Kg
Methylene Chloride	11 U D5	ug/Kg
t-1,2-Dichloroethene	1.0 U D5	ug/Kg
1,1-Dichloroethane	1.0 U D5	ug/Kg
c-1,2-Dichloroethene	1.0 U D5	ug/Kg
Chloroform	1.0 U D5	ug/Kg
1,1,1-Trichloroethane	1.0 U D5	ug/Kg
Carbon tetrachloride	1.0 U D5	ug/Kg
1,2-Dichloroethane	1.0 U D5	ug/Kg
Trichloroethene	1.0 U D5	ug/Kg
1,2-Dichloropropane	1.0 U D5	ug/Kg
Bromodichloromethane	1.0 U D5	ug/Kg
c-1,3-Dichloropropene	1.0 U D5	ug/Kg
t-1,3-Dichloropropene	1.0 U D5	ug/Kg
1,1,2-Trichloroethane	1.0 U D5	ug/Kg
Tetrachloroethene	3.4 U D5	ug/Kg
Dibromochloromethane	1.0 U D5	ug/Kg
Chlorobenzene	1.0 U D5	ug/Kg
Bromoform	1.0 U D5	ug/Kg
1,1,2,2-Tetrachloroethane	1.0 U D5	ug/Kg
1,3-Dichlorobenzene	1.0 U D5	ug/Kg
1,4-Dichlorobenzene	1.0 U D5	ug/Kg
1,2-Dichlorobenzene	1.0 U D5	ug/Kg

Surrogate:	% RECOV	LIMITS
Dibromofluoromethane	146	61-128
D8-Toluene	112	77-119
Bromofluorobenzene	84	60-130
Date Prepared	08/15/03 17:00	
Date Analyzed	08/27/03 12:50	

U = Compound was analyzed for but not detected to the level shown.
D5 = Analyte value determined from a 1:1.04 dilution.

RESULTS OF ANALYSIS

EPA METHOD 8270 -

PAH Compounds by SIM	MPT-250-SB 18 (3)	Units
Naphthalene	36 U D3	ug/Kg
2-Methylnaphthalene	36 U D3	ug/Kg
1-Methylnaphthalene	36 U D3	ug/Kg
Acenaphthylene	36 U D3	ug/Kg
Acenaphthene	36 U D3	ug/Kg
Fluorene	36 U D3	ug/Kg
Phenanthrene	36 U D3	ug/Kg
Anthracene	36 U D3	ug/Kg
Fluoranthene	36 U D3	ug/Kg
Pyrene	36 U D3	ug/Kg
Chrysene	36 U D3	ug/Kg
Benzo(a)anthracene	36 U D3	ug/Kg
Benzo(b)fluoranthene	36 U D3	ug/Kg
Benzo(k)fluoranthene	36 U D3	ug/Kg
Benzo(a)pyrene	36 U D3	ug/Kg
Indeno(1,2,3-cd)pyrene	36 U D3	ug/Kg
Dibenzo(a,h)anthracene	36 U D3	ug/Kg
Benzo(g,h,i)perylene	36 U D3	ug/Kg
Surrogate:	**% RECOV**	**LIMITS**
p-Terphenyl	92	19-162
Date Prepared	08/20/03	
Date Analyzed	08/22/03 16:20	

U = Compound was analyzed for but not detected to the level shown.
D3 = Analyte value determined from a 1:10 dilution.

RESULTS OF ANALYSIS

Miscellaneous	METHOD	MPT-250-SB 18 (3)	Units
Percent Solids	WETS/31	**91**	%
Date Prepared		08/17/03 21:00	
Date Analyzed		08/18/03 13:00	

EPA METHOD FLPRO - PETROL. RESIDUAL ORG.	MPT-250-SB 18 (3)	Units
Hydrocarbons (C8-C40)	**71**	mg/Kg

Surrogate:	% RECOV	LIMITS
o-Terphenyl	84	51-148
Nonatriacontane	100	36-152
Date Prepared	08/18/03	
Date Analyzed	08/21/03 10:15	

ENCO LABORATORIES
REPORT # : JAX33667
DATE REPORTED: August 27, 2003
REFERENCE : CTO303 SITE 250
PROJECT NAME : 5863

RESULTS OF ANALYSIS

EPA METHOD 8260 - VOLATILE ORGANICS	LAB BLANK	Units
Methyl tert-butyl ether	100 U D6	ug/Kg
Benzene	100 U D6	ug/Kg
Toluene	100 U D6	ug/Kg
Chlorobenzene	100 U D6	ug/Kg
Ethylbenzene	100 U D6	ug/Kg
m-Xylene & p-Xylene	200 U D6	ug/Kg
o-Xylene	100 U D6	ug/Kg
1,3-Dichlorobenzene	100 U D6	ug/Kg
1,4-Dichlorobenzene	100 U D6	ug/Kg
1,2-Dichlorobenzene	100 U D6	ug/Kg

Surrogate:	% RECOV	LIMITS
Dibromofluoromethane	109	61-128
D8-Toluene	95	77-119
Bromofluorobenzene	73	60-130
Date Analyzed	08/21/03 02:07	

U = Compound was analyzed for but not detected to the level shown.
D6 = Analyte value determined from a 1:100 dilution.

ENCO LABORATORIES
REPORT # : JAX33667
DATE REPORTED: August 27, 2003
REFERENCE : CTO303 SITE 250
PROJECT NAME : 5863

RESULTS OF ANALYSIS

EPA METHOD 8260 - VOLATILE ORGANICS	LAB BLANK	Units
Dichlorodifluoromethane	200 U D6	ug/Kg
Chloromethane	100 U D6	ug/Kg
Vinyl Chloride	100 U D6	ug/Kg
Bromomethane	100 U D6	ug/Kg
Chloroethane	100 U D6	ug/Kg
Trichlorofluoromethane	100 U D6	ug/Kg
1,1-Dichloroethene	100 U D6	ug/Kg
Methylene Chloride	1000 U D6	ug/Kg
t-1,2-Dichloroethene	100 U D6	ug/Kg
1,1-Dichloroethane	100 U D6	ug/Kg
c-1,2-Dichloroethene	100 U D6	ug/Kg
Chloroform	100 U D6	ug/Kg
1,1,1-Trichloroethane	100 U D6	ug/Kg
Carbon tetrachloride	100 U D6	ug/Kg
1,2-Dichloroethane	100 U D6	ug/Kg
Trichloroethene	100 U D6	ug/Kg
1,2-Dichloropropane	100 U D6	ug/Kg
Bromodichloromethane	100 U D6	ug/Kg
c-1,3-Dichloropropene	100 U D6	ug/Kg
t-1,3-Dichloropropene	100 U D6	ug/Kg
1,1,2-Trichloroethane	100 U D6	ug/Kg
Tetrachloroethene	300 U D6	ug/Kg
Dibromochloromethane	100 U D6	ug/Kg
Chlorobenzene	100 U D6	ug/Kg
Bromoform	100 U D6	ug/Kg
1,1,2,2-Tetrachloroethane	100 U D6	ug/Kg
1,3-Dichlorobenzene	100 U D6	ug/Kg
1,4-Dichlorobenzene	100 U D6	ug/Kg
1,2-Dichlorobenzene	100 U D6	ug/Kg

Surrogate:	% RECOV	LIMITS
Dibromofluoromethane	109	61-128
D8-Toluene	95	77-119
Bromofluorobenzene	73	60-130
Date Analyzed	08/21/03 02:07	

U = Compound was analyzed for but not detected to the level shown.
D6 = Analyte value determined from a 1:100 dilution.

ENCO LABORATORIES
REPORT # : JAX33667
DATE REPORTED: August 27, 2003
REFERENCE : CTO303 SITE 250
PROJECT NAME : 5863

RESULTS OF ANALYSIS

EPA METHOD 8270 -

PAH Compounds by SIM	LAB BLANK	Units
Naphthalene	3.3 U	ug/Kg
2-Methylnaphthalene	3.3 U	ug/Kg
1-Methylnaphthalene	3.3 U	ug/Kg
Acenaphthylene	3.3 U	ug/Kg
Acenaphthene	3.3 U	ug/Kg
Fluorene	3.3 U	ug/Kg
Phenanthrene	3.3 U	ug/Kg
Anthracene	3.3 U	ug/Kg
Fluoranthene	3.3 U	ug/Kg
Pyrene	3.3 U	ug/Kg
Chrysene	3.3 U	ug/Kg
Benzo(a)anthracene	3.3 U	ug/Kg
Benzo(b)fluoranthene	3.3 U	ug/Kg
Benzo(k)fluoranthene	3.3 U	ug/Kg
Benzo(a)pyrene	3.3 U	ug/Kg
Indeno(1,2,3-cd)pyrene	3.3 U	ug/Kg
Dibenzo(a,h)anthracene	3.3 U	ug/Kg
Benzo(g,h,i)perylene	3.3 U	ug/Kg

Surrogate:	% RECOV	LIMITS
p-Terphenyl	78	19-162
Date Prepared	08/20/03	
Date Analyzed	08/22/03 13:56	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JAX33667
DATE REPORTED: August 27, 2003
REFERENCE : CTO303 SITE 250
PROJECT NAME : 5863

RESULTS OF ANALYSIS

EPA METHOD FLPRO - PETROL. RESIDUAL ORG.	**LAB BLANK**	**Units**
Hydrocarbons (C8-C40)	6.6 U	mg/Kg
Surrogate:	**% RECOV**	**LIMITS**
o-Terphenyl	78	51-148
Nonatriacontane	87	36-152
Date Prepared	08/18/03	
Date Analyzed	08/20/03 19:31	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JAX33667
DATE REPORTED: August 27, 2003
REFERENCE : CTO303 SITE 250
PROJECT NAME : 5863

RESULTS OF ANALYSIS

EPA METHOD 8260 - VOLATILE ORGANICS	LAB BLANK	Units
Methyl tert-butyl ether	1.0 U	ug/Kg
Benzene	1.0 U	ug/Kg
Toluene	1.0 U	ug/Kg
Chlorobenzene	1.0 U	ug/Kg
Ethylbenzene	1.0 U	ug/Kg
m-Xylene & p-Xylene	2.0 U	ug/Kg
o-Xylene	1.0 U	ug/Kg
1,3-Dichlorobenzene	1.0 U	ug/Kg
1,4-Dichlorobenzene	1.0 U	ug/Kg
1,2-Dichlorobenzene	1.0 U	ug/Kg
Surrogate:	**% RECOV**	**LIMITS**
Dibromofluoromethane	117	61-128
D8-Toluene	100	77-119
Bromofluorobenzene	82	60-130
Date Analyzed	08/27/03 12:14	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JAX33667
DATE REPORTED: August 27, 2003
REFERENCE : CTO303 SITE 250
PROJECT NAME : 5863

RESULTS OF ANALYSIS

EPA METHOD 8260 -

VOLATILE ORGANICS	LAB BLANK	Units
Dichlorodifluoromethane	2.0 U	ug/Kg
Chloromethane	1.0 U	ug/Kg
Vinyl Chloride	1.0 U	ug/Kg
Bromomethane	1.0 U	ug/Kg
Chloroethane	1.0 U	ug/Kg
Trichlorofluoromethane	1.0 U	ug/Kg
1,1-Dichloroethene	1.0 U	ug/Kg
Methylene Chloride	10 U	ug/Kg
t-1,2-Dichloroethene	1.0 U	ug/Kg
1,1-Dichloroethane	1.0 U	ug/Kg
c-1,2-Dichloroethene	1.0 U	ug/Kg
Chloroform	1.0 U	ug/Kg
1,1,1-Trichloroethane	1.0 U	ug/Kg
Carbon tetrachloride	1.0 U	ug/Kg
1,2-Dichloroethane	1.0 U	ug/Kg
Trichloroethene	1.0 U	ug/Kg
1,2-Dichloropropane	1.0 U	ug/Kg
Bromodichloromethane	1.0 U	ug/Kg
c-1,3-Dichloropropene	1.0 U	ug/Kg
t-1,3-Dichloropropene	1.0 U	ug/Kg
1,1,2-Trichloroethane	1.0 U	ug/Kg
Tetrachloroethene	3.0 U	ug/Kg
Dibromochloromethane	1.0 U	ug/Kg
Chlorobenzene	1.0 U	ug/Kg
Bromoform	1.0 U	ug/Kg
1,1,2,2-Tetrachloroethane	1.0 U	ug/Kg
1,3-Dichlorobenzene	1.0 U	ug/Kg
1,4-Dichlorobenzene	1.0 U	ug/Kg
1,2-Dichlorobenzene	1.0 U	ug/Kg

Surrogate:	% RECOV	LIMITS
Dibromofluoromethane	117	61-128
D8-Toluene	100	77-119
Bromofluorobenzene	82	60-130
Date Analyzed	08/27/03 12:14	

U = Compound was analyzed for but not detected to the level shown.

LABORATORY CERTIFICATIONS

Laboratory Certification: NELAC:E82277

All analyses reported with this project were analyzed by the facility indicated unless identified below.

QUALITY CONTROL DATA

Parameter	% RECOVERY MS/MSD/LCS	ACCEPT LIMITS	% RPD MS/MSD	ACCEPT LIMITS
EPA Method 8260				
1,1-Dichloroethene	47/ 52/ 59	19-161	10	19
Benzene	80/ 78/ 75	60-129	2	23
Trichloroethene	75/ 76/ 71	56-132	1	17
Toluene	94/ 97/ 86	53-129	3	22
Chlorobenzene	97/101/ 93	61-136	4	24
1,1-Dichloroethene	57/ 58/ 67	19-161	2	19
Benzene	96/ 92/ 95	60-129	4	23
Trichloroethene	101/103/ 90	56-132	2	17
Toluene	99/ 88/104	53-129	12	22
Chlorobenzene	114/107/122	61-136	6	24
1,1-Dichloroethene	47/ 52/ 59	19-161	10	19
Benzene	80/ 78/ 75	60-129	2	23
Trichloroethene	75/ 76/ 71	56-132	1	17
Toluene	94/ 97/ 86	53-129	3	22
Chlorobenzene	97/101/ 93	61-136	4	24
1,1-Dichloroethene	57/ 58/ 67	19-161	2	19
Benzene	96/ 92/ 95	60-129	4	23
Trichloroethene	101/103/ 90	56-132	2	17
Toluene	99/ 88/104	53-129	12	22
Chlorobenzene	114/107/122	61-136	6	24

< = Less Than
MS = Matrix Spike
MSD = Matrix Spike Duplicate
LCS = Laboratory Control Standard
RPD = Relative Percent Difference

QUALITY CONTROL DATA

Parameter	% RECOVERY MS/MSD/LCS	ACCEPT LIMITS	% RPD MS/MSD	ACCEPT LIMITS
EPA Method 8270				
Naphthalene	105/100/ 76	20-131	5	29
Acenaphthene	115/100/ 79	24-132	14	23
Benzo(a)pyrene	120/115/ 96	34-140	4	28
Benzo(g,h,i)perylene	* / * /119	31-152	*	21
PETROL. RESIDUAL ORG.				
Hydrocarbons (C8-C40)	65/ 78/ 61	62-204	18	25

< = Less Than
MS = Matrix Spike
MSD = Matrix Spike Duplicate
LCS = Laboratory Control Standard
RPD = Relative Percent Difference
* = MS/MSD/RPD unavailable due to high original sample concentration.

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

250
SOIL
11-03

Client: Tetra Tech NUS, Inc
Project: CTO 303 NS MAYPORT
PO No:
Sample Date: 11/25/03
Received Date: 11/26/03
Extraction Date: 12/02/03
Analysis Date: 12/17/03
Report Date: 12/18/2003
Matrix: SOIL
% Solids: 89.7

Lab ID: WT3024-1RA
Client ID: MPT-250-SB22-01
SDG: WT3024
Extracted by: LS
Extraction Method: SW846 3550
Analyst: JCG
Analysis Method: SW846 M8270C
Lab Prep Batch: WG4893
Units: ug/Kg

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
91-20-3	Naphthalene	U	22	1.0	20	22	0.99
91-57-6	2-Methylnaphthalene	U	22	1.0	20	22	0.62
90-12-0	1-Methylnaphthalene	U	22	1.0	20	22	0.62
208-96-8	Acenaphthylene	U	22	1.0	20	22	0.59
83-32-9	Acenaphthene	U	22	1.0	20	22	0.78
86-73-7	Fluorene	U	22	1.0	20	22	0.68
85-01-8	Phenanthrene	U	22	1.0	20	22	1.6
120-12-7	Anthracene	U	22	1.0	20	22	0.90
206-44-0	Fluoranthene	U	22	1.0	20	22	1.8
129-00-0	Pyrene	U	22	1.0	20	22	2.0
56-55-3	Benzo(a)anthracene	U	22	1.0	20	22	1.1
218-01-9	Chrysene	U	22	1.0	20	22	1.4
205-99-2	Benzo(b)fluoranthene	U	22	1.0	20	22	2.3
207-08-9	Benzo(k)fluoranthene	U	22	1.0	20	22	1.5
50-32-8	Benzo(a)pyrene	U	22	1.0	20	22	0.84
193-39-5	Indeno(1,2,3-cd)pyrene	U	22	1.0	20	22	2.2
53-70-3	Dibenzo(a,h)anthracene	U	22	1.0	20	22	2.2
191-24-2	Benzo(g,h,i)perylene	U	22	1.0	20	22	1.9
7297-45-2	2-Methylnaphthalene-d10		94%				
81103-79-9	Fluorene-d10		106%				
1718-52-1	Pyrene-d10		120%				

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Tetra Tech NUS, Inc
Project: CTO 303 NS MAYPORT
PO No:
Sample Date: 11/25/03
Received Date: 11/26/03
Extraction Date: 12/04/03
Analysis Date: 12/18/03
Report Date: 12/22/2003
Matrix: SOIL
% Solids: 89.7

Lab ID: WT3024-1DL
Client ID: MPT-250-SB22-01
SDG: WT3024
Extracted by: NB
Extraction Method: SW846 3550
Analyst: SAW
Analysis Method: SW846 M8100
Lab Prep Batch: WG4950
Units: mg/Kg

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
	Petroleum Range Organics	B	1100	20	20	440	31
	n-Triacontane-D62		D				
	O-Terphenyl		D				

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Tetra Tech NUS, Inc
Project: CTO 303 NS MAYPORT
PO No:
Sample Date: 11/25/03
Received Date: 11/26/03
Extraction Date: 12/02/03
Analysis Date: 12/09/03
Report Date: 12/18/2003
Matrix: SOIL
% Solids: 95.8

Lab ID: WT3024-2
Client ID: MPT-250-SB23-01
SDG: WT3024
Extracted by: LS
Extraction Method: SW846 3550
Analyst: JCG
Analysis Method: SW846 M8270C
Lab Prep Batch: WG4893
Units: ug/Kg

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
91-20-3	Naphthalene	U	21	1.0	20	21	0.93
91-57-6	2-Methylnaphthalene	U	21	1.0	20	21	0.58
90-12-0	1-Methylnaphthalene	U	21	1.0	20	21	0.58
208-96-8	Acenaphthylene	U	21	1.0	20	21	0.55
83-32-9	Acenaphthene	U	21	1.0	20	21	0.73
86-73-7	Fluorene	U	21	1.0	20	21	0.64
85-01-8	Phenanthrene	U	21	1.0	20	21	1.5
120-12-7	Anthracene	U	21	1.0	20	21	0.84
206-44-0	Fluoranthene	U	21	1.0	20	21	1.7
129-00-0	Pyrene	U	21	1.0	20	21	1.9
56-55-3	Benzo(a)anthracene	U	21	1.0	20	21	1.0
218-01-9	Chrysene	U	21	1.0	20	21	1.3
205-99-2	Benzo(b)fluoranthene	U	21	1.0	20	21	2.1
207-08-9	Benzo(k)fluoranthene	U	21	1.0	20	21	1.4
50-32-8	Benzo(a)pyrene	U	21	1.0	20	21	0.78
193-39-5	Indeno(1,2,3-cd)pyrene	U	21	1.0	20	21	2.1
53-70-3	Dibenzo(a,h)anthracene	U	21	1.0	20	21	2.1
191-24-2	Benzo(g,h,i)perylene	U	21	1.0	20	21	1.8
7297-45-2	2-Methylnaphthalene-d10		76%				
81103-79-9	Fluorene-d10		76%				
1718-52-1	Pyrene-d10		116%				

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Tetra Tech NUS, Inc
Project: CTO 303 NS MAYPORT
PO No:
Sample Date: 11/25/03
Received Date: 11/26/03
Extraction Date: 12/04/03
Analysis Date: 12/13/03
Report Date: 12/22/2003
Matrix: SOIL
% Solids: 95.8

Lab ID: WT3024-2
Client ID: MPT-250-SB23-01
SDG: WT3024
Extracted by: NB
Extraction Method: SW846 3550
Analyst: SAW
Analysis Method: SW846 M8100
Lab Prep Batch: WG4950
Units: mg/Kg

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
	Petroleum Range Organics	B	130	1.0	20	21	1.5
	n-Triacontane-D62		105%				
	O-Terphenyl		86%				

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Tetra Tech NUS, Inc
Project: CTO 303 NS MAYPORT
PO No:
Sample Date: 11/25/03
Received Date: 11/26/03
Extraction Date: 12/02/03
Analysis Date: 12/17/03
Report Date: 12/18/2003
Matrix: SOIL
% Solids: 97.5

Lab ID: WT3024-3DL2
Client ID: MPT-250-SB24-01
SDG: WT3024
Extracted by: LS
Extraction Method: SW846 3550
Analyst: JCG
Analysis Method: SW846 M8270C
Lab Prep Batch: WG4893
Units: ug/Kg

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
91-20-3	Naphthalene	U	41	2.0	20	41	1.8
91-57-6	2-Methylnaphthalene	U	41	2.0	20	41	1.1
90-12-0	1-Methylnaphthalene	U	41	2.0	20	41	1.1
208-96-8	Acenaphthylene	U	41	2.0	20	41	1.1
83-32-9	Acenaphthene	U	41	2.0	20	41	1.4
86-73-7	Fluorene	U	41	2.0	20	41	1.2
85-01-8	Phenanthrene	U	41	2.0	20	41	3.0
120-12-7	Anthracene	U	41	2.0	20	41	1.7
206-44-0	Fluoranthene	U	41	2.0	20	41	3.4
129-00-0	Pyrene	U	41	2.0	20	41	3.7
56-55-3	Benzo(a)anthracene	U	41	2.0	20	41	2.1
218-01-9	Chrysene	U	41	2.0	20	41	2.5
205-99-2	Benzo(b)fluoranthene	U	41	2.0	20	41	4.2
207-08-9	Benzo(k)fluoranthene	U	41	2.0	20	41	2.8
50-32-8	Benzo(a)pyrene	U	41	2.0	20	41	1.5
193-39-5	Indeno(1,2,3-cd)pyrene	U	41	2.0	20	41	4.1
53-70-3	Dibenzo(a,h)anthracene	U	41	2.0	20	41	4.1
191-24-2	Benzo(g,h,i)perylene	U	41	2.0	20	41	3.5
7297-45-2	2-Methylnaphthalene-d10		95%				
81103-79-9	Fluorene-d10		110%				
1718-52-1	Pyrene-d10		137%				

Page 01 of 01 K6012.D

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Tetra Tech NUS, Inc
Project: CTO 303 NS MAYPORT
PO No:
Sample Date: 11/25/03
Received Date: 11/26/03
Extraction Date: 12/04/03
Analysis Date: 12/13/03
Report Date: 12/22/2003
Matrix: SOIL
% Solids: 97.5

Lab ID: WT3024-3
Client ID: MPT-250-SB24-01
SDG: WT3024
Extracted by: NB
Extraction Method: SW846 3550
Analyst: SAW
Analysis Method: SW846 M8100
Lab Prep Batch: WG4950
Units: mg/Kg

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
	Petroleum Range Organics	B	75	1.0	20	20	1.4
	n-Triacontane-D62		107%				
	O-Terphenyl		88%				

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Tetra Tech NUS, Inc
Project: CTO 303 NS MAYPORT
PO No:
Sample Date: 11/25/03
Received Date: 11/26/03
Extraction Date: 12/02/03
Analysis Date: 12/09/03
Report Date: 12/18/2003
Matrix: SOIL
% Solids: 95.6

Lab ID: WT3024-4
Client ID: MPT-250-SB25-01
SDG: WT3024
Extracted by: LS
Extraction Method: SW846 3550
Analyst: JCG
Analysis Method: SW846 M8270C
Lab Prep Batch: WG4893
Units: ug/Kg

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
91-20-3	Naphthalene	U	21	1.0	20	21	0.93
91-57-6	2-Methylnaphthalene	U	21	1.0	20	21	0.59
90-12-0	1-Methylnaphthalene	U	21	1.0	20	21	0.59
208-96-8	Acenaphthylene	U	21	1.0	20	21	0.55
83-32-9	Acenaphthene	U	21	1.0	20	21	0.73
86-73-7	Fluorene	U	21	1.0	20	21	0.64
85-01-8	Phenanthrene	U	21	1.0	20	21	1.5
120-12-7	Anthracene	U	21	1.0	20	21	0.85
206-44-0	Fluoranthene	U	21	1.0	20	21	1.7
129-00-0	Pyrene	U	21	1.0	20	21	1.9
56-55-3	Benzo(a)anthracene	U	21	1.0	20	21	1.0
218-01-9	Chrysene	U	21	1.0	20	21	1.3
205-99-2	Benzo(b)fluoranthene	U	21	1.0	20	21	2.1
207-08-9	Benzo(k)fluoranthene	U	21	1.0	20	21	1.4
50-32-8	Benzo(a)pyrene	U	21	1.0	20	21	0.78
193-39-5	Indeno(1,2,3-cd)pyrene	U	21	1.0	20	21	2.1
53-70-3	Dibenzo(a,h)anthracene	U	21	1.0	20	21	2.1
191-24-2	Benzo(g,h,i)perylene	U	21	1.0	20	21	1.8
7297-45-2	2-Methylnaphthalene-d10		94%				
81103-79-9	Fluorene-d10		100%				
1718-52-1	Pyrene-d10		148%				

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Tetra Tech NUS, Inc	Lab ID: WT3024-4DL
Project: CTO 303 NS MAYPORT	Client ID: MPT-250-SB25-01
PO No:	SDG: WT3024
Sample Date: 11/25/03	Extracted by: NB
Received Date: 11/26/03	Extraction Method: SW846 3550
Extraction Date: 12/04/03	Analyst: SAW
Analysis Date: 12/18/03	Analysis Method: SW846 M8100
Report Date: 12/22/2003	Lab Prep Batch: WG4950
Matrix: SOIL	Units: mg/Kg
% Solids: 95.6	

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
	Petroleum Range Organics	B	270	2.0	20	42	2.9
	n-Triacontane-D62		*119%				
	O-Terphenyl		92%				

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Tetra Tech NUS, Inc
Project: CTO 303 NS MAYPORT
PO No:
Sample Date: 11/25/03
Received Date: 11/26/03
Extraction Date: 12/02/03
Analysis Date: 12/08/03
Report Date: 12/18/2003
Matrix: SOIL
% Solids: 95.5

Lab ID: WT3024-5
Client ID: MPT-250-SB26-01
SDG: WT3024
Extracted by: LS
Extraction Method: SW846 3550
Analyst: JCG
Analysis Method: SW846 M8270C
Lab Prep Batch: WG4893
Units: ug/Kg

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
91-20-3	Naphthalene	U	21	1.0	20	21	0.93
91-57-6	2-Methylnaphthalene	U	21	1.0	20	21	0.59
90-12-0	1-Methylnaphthalene	U	21	1.0	20	21	0.59
208-96-8	Acenaphthylene	U	21	1.0	20	21	0.56
83-32-9	Acenaphthene	U	21	1.0	20	21	0.73
86-73-7	Fluorene	U	21	1.0	20	21	0.64
85-01-8	Phenanthrene	U	21	1.0	20	21	1.5
120-12-7	Anthracene	U	21	1.0	20	21	0.85
206-44-0	Fluoranthene	U	21	1.0	20	21	1.7
129-00-0	Pyrene	U	21	1.0	20	21	1.9
56-55-3	Benzo(a)anthracene	U	21	1.0	20	21	1.0
218-01-9	Chrysene	U	21	1.0	20	21	1.3
205-99-2	Benzo(b)fluoranthene	U	21	1.0	20	21	2.1
207-08-9	Benzo(k)fluoranthene	U	21	1.0	20	21	1.4
50-32-8	Benzo(a)pyrene	U	21	1.0	20	21	0.79
193-39-5	Indeno(1,2,3-cd)pyrene	U	21	1.0	20	21	2.1
53-70-3	Dibenzo(a,h)anthracene	U	21	1.0	20	21	2.1
191-24-2	Benzo(g,h,i)perylene	U	21	1.0	20	21	1.8
7297-45-2	2-Methylnaphthalene-d10		68%				
81103-79-9	Fluorene-d10		84%				
1718-52-1	Pyrene-d10		117%				

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Tetra Tech NUS, Inc
Project: CTO 303 NS MAYPORT
PO No:
Sample Date: 11/25/03
Received Date: 11/26/03
Extraction Date: 12/04/03
Analysis Date: 12/12/03
Report Date: 12/22/2003
Matrix: SOIL
% Solids: 95.5

Lab ID: WT3024-5
Client ID: MPT-250-SB26-01
SDG: WT3024
Extracted by: NB
Extraction Method: SW846 3550
Analyst: SAW
Analysis Method: SW846 M8100
Lab Prep Batch: WG4950
Units: mg/Kg

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
	Petroleum Range Organics	B	26	1.0	20	21	1.5
	n-Triacontane-D62		110%				
	O-Terphenyl		86%				

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Tetra Tech NUS, Inc
Project: CTO 303 NS MAYPORT
PO No:
Sample Date: 11/25/03
Received Date: 11/26/03
Extraction Date: 12/02/03
Analysis Date: 12/09/03
Report Date: 12/18/2003
Matrix: SOIL
% Solids: 94.0

Lab ID: WT3024-6
Client ID: MPT-250-SB27-01
SDG: WT3024
Extracted by: LS
Extraction Method: SW846 3550
Analyst: JCG
Analysis Method: SW846 M8270C
Lab Prep Batch: WG4893
Units: ug/Kg

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
91-20-3	Naphthalene	U	21	1.0	20	21	0.95
91-57-6	2-Methylnaphthalene	U	21	1.0	20	21	0.60
90-12-0	1-Methylnaphthalene	U	21	1.0	20	21	0.60
208-96-8	Acenaphthylene	U	21	1.0	20	21	0.56
83-32-9	Acenaphthene	U	21	1.0	20	21	0.74
86-73-7	Fluorene	U	21	1.0	20	21	0.65
85-01-8	Phenanthrene	U	21	1.0	20	21	1.6
120-12-7	Anthracene	U	21	1.0	20	21	0.86
206-44-0	Fluoranthene	U	21	1.0	20	21	1.7
129-00-0	Pyrene	U	21	1.0	20	21	1.9
56-55-3	Benzo(a)anthracene	U	21	1.0	20	21	1.1
218-01-9	Chrysene	U	21	1.0	20	21	1.3
205-99-2	Benzo(b)fluoranthene	U	21	1.0	20	21	2.2
207-08-9	Benzo(k)fluoranthene	U	21	1.0	20	21	1.4
50-32-8	Benzo(a)pyrene	U	21	1.0	20	21	0.80
193-39-5	Indeno(1,2,3-cd)pyrene	U	21	1.0	20	21	2.1
53-70-3	Dibenzo(a,h)anthracene	U	21	1.0	20	21	2.1
191-24-2	Benzo(g,h,i)perylene	U	21	1.0	20	21	1.8
7297-45-2	2-Methylnaphthalene-d10		85%				
81103-79-9	Fluorene-d10		105%				
1718-52-1	Pyrene-d10		135%				

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Tetra Tech NUS, Inc
Project: CTO 303 NS MAYPORT
PO No:
Sample Date: 11/25/03
Received Date: 11/26/03
Extraction Date: 12/04/03
Analysis Date: 12/19/03
Report Date: 12/22/2003
Matrix: SOIL
% Solids: 94.0

Lab ID: WT3024-6DL
Client ID: MPT-250-SB27-01
SDG: WT3024
Extracted by: NB
Extraction Method: SW846 3550
Analyst: SAW
Analysis Method: SW846 M8100
Lab Prep Batch: WG4950
Units: mg/Kg

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
	Petroleum Range Organics	B	200	2.0	20	42	3.0
	n-Triacontane-D62		106%				
	O-Terphenyl		87%				

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Tetra Tech NUS, Inc
Project: CTO 303 NS MAYPORT
PO No:
Sample Date: 11/25/03
Received Date: 11/26/03
Extraction Date: 12/02/03
Analysis Date: 12/08/03
Report Date: 12/18/2003
Matrix: SOIL
% Solids: 91.5

Lab ID: WT3024-7
Client ID: MPT-250-SB28-03
SDG: WT3024
Extracted by: LS
Extraction Method: SW846 3550
Analyst: JCG
Analysis Method: SW846 M8270C
Lab Prep Batch: WG4893
Units: ug/Kg

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
91-20-3	Naphthalene	U	22	1.0	20	22	0.97
91-57-6	2-Methylnaphthalene	U	22	1.0	20	22	0.61
90-12-0	1-Methylnaphthalene	U	22	1.0	20	22	0.61
208-96-8	Acenaphthylene	U	22	1.0	20	22	0.58
83-32-9	Acenaphthene	U	22	1.0	20	22	0.76
86-73-7	Fluorene	U	22	1.0	20	22	0.67
85-01-8	Phenanthrene	U	22	1.0	20	22	1.6
120-12-7	Anthracene	U	22	1.0	20	22	0.89
206-44-0	Fluoranthene	U	22	1.0	20	22	1.8
129-00-0	Pyrene	U	22	1.0	20	22	2.0
56-55-3	Benzo(a)anthracene	U	22	1.0	20	22	1.1
218-01-9	Chrysene	U	22	1.0	20	22	1.3
205-99-2	Benzo(b)fluoranthene	U	22	1.0	20	22	2.2
207-08-9	Benzo(k)fluoranthene	U	22	1.0	20	22	1.5
50-32-8	Benzo(a)pyrene	U	22	1.0	20	22	0.82
193-39-5	Indeno(1,2,3-cd)pyrene	U	22	1.0	20	22	2.2
53-70-3	Dibenzo(a,h)anthracene	U	22	1.0	20	22	2.2
191-24-2	Benzo(g,h,i)perylene	U	22	1.0	20	22	1.9
7297-45-2	2-Methylnaphthalene-d10		70%				
81103-79-9	Fluorene-d10		73%				
1718-52-1	Pyrene-d10		123%				

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Tetra Tech NUS, Inc
Project: CTO 303 NS MAYPORT
PO No:
Sample Date: 11/25/03
Received Date: 11/26/03
Extraction Date: 12/04/03
Analysis Date: 12/12/03
Report Date: 12/22/2003
Matrix: SOIL
% Solids: 91.5

Lab ID: WT3024-7
Client ID: MPT-250-SB28-03
SDG: WT3024
Extracted by: NB
Extraction Method: SW846 3550
Analyst: SAW
Analysis Method: SW846 M8100
Lab Prep Batch: WG4950
Units: mg/Kg

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
	Petroleum Range Organics	JB	7.7	1.0	20	22	1.5
	n-Triacontane-D62		*138%				
	O-Terphenyl		*111%				

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Tetra Tech NUS, Inc
Project: CTO 303 NS MAYPORT
PO No:
Sample Date: 11/25/03
Received Date: 11/26/03
Extraction Date: 12/02/03
Analysis Date: 12/11/03
Report Date: 12/18/2003
Matrix: SOIL
% Solids: 92.0

Lab ID: WT3024-8DL2
Client ID: MPT-250-SB29-03
SDG: WT3024
Extracted by: LS
Extraction Method: SW846 3550
Analyst: JCG
Analysis Method: SW846 M8270C
Lab Prep Batch: WG4893
Units: ug/Kg

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
91-20-3	Naphthalene	U	2200	100	20	2200	97
91-57-6	2-Methylnaphthalene	U	2200	100	20	2200	61
90-12-0	1-Methylnaphthalene	U	2200	100	20	2200	61
208-96-8	Acenaphthylene	U	2200	100	20	2200	58
83-32-9	Acenaphthene	U	2200	100	20	2200	76
86-73-7	Fluorene	U	2200	100	20	2200	66
85-01-8	Phenanthrene	U	2200	100	20	2200	160
120-12-7	Anthracene	U	2200	100	20	2200	88
206-44-0	Fluoranthene	U	2200	100	20	2200	180
129-00-0	Pyrene	U	2200	100	20	2200	200
56-55-3	Benzo(a)anthracene	U	2200	100	20	2200	110
218-01-9	Chrysene	U	2200	100	20	2200	130
205-99-2	Benzo(b)fluoranthene	U	2200	100	20	2200	220
207-08-9	Benzo(k)fluoranthene	U	2200	100	20	2200	150
50-32-8	Benzo(a)pyrene	U	2200	100	20	2200	82
193-39-5	Indeno(1,2,3-cd)pyrene	U	2200	100	20	2200	220
53-70-3	Dibenzo(a,h)anthracene	U	2200	100	20	2200	220
191-24-2	Benzo(g,h,i)perylene	U	2200	100	20	2200	190
7297-45-2	2-Methylnaphthalene-d10		D				
81103-79-9	Fluorene-d10		D				
1718-52-1	Pyrene-d10		D				

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Tetra Tech NUS, Inc
Project: CTO 303 NS MAYPORT
PO No:
Sample Date: 11/25/03
Received Date: 11/26/03
Extraction Date: 12/04/03
Analysis Date: 12/19/03
Report Date: 12/22/2003
Matrix: SOIL
% Solids: 92.0

Lab ID: WT3024-8DL
Client ID: MPT-250-SB29-03
SDG: WT3024
Extracted by: NB
Extraction Method: SW846 3550
Analyst: SAW
Analysis Method: SW846 M8100
Lab Prep Batch: WG4950
Units: mg/Kg

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
	Petroleum Range Organics	B	12000	100	20	2200	150
	n-Triacontane-D62		D				
	O-Terphenyl		D				

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Tetra Tech NUS, Inc
Project: CTO 303 NS MAYPORT
PO No:
Sample Date: 11/25/03
Received Date: 11/26/03
Extraction Date: 12/02/03
Analysis Date: 12/08/03
Report Date: 12/18/2003
Matrix: SOIL
% Solids: 94.3

Lab ID: WT3024-9
Client ID: MPT-250-SB30-03
SDG: WT3024
Extracted by: LS
Extraction Method: SW846 3550
Analyst: JCG
Analysis Method: SW846 M8270C
Lab Prep Batch: WG4893
Units: ug/Kg

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
91-20-3	Naphthalene	U	21	1.0	20	21	0.94
91-57-6	2-Methylnaphthalene	U	21	1.0	20	21	0.59
90-12-0	1-Methylnaphthalene	U	21	1.0	20	21	0.59
208-96-8	Acenaphthylene	U	21	1.0	20	21	0.56
83-32-9	Acenaphthene	U	21	1.0	20	21	0.74
86-73-7	Fluorene	U	21	1.0	20	21	0.65
85-01-8	Phenanthrene	U	21	1.0	20	21	1.6
120-12-7	Anthracene	U	21	1.0	20	21	0.86
206-44-0	Fluoranthene	U	21	1.0	20	21	1.7
129-00-0	Pyrene	U	21	1.0	20	21	1.9
56-55-3	Benzo(a)anthracene	U	21	1.0	20	21	1.1
218-01-9	Chrysene	U	21	1.0	20	21	1.3
205-99-2	Benzo(b)fluoranthene	U	21	1.0	20	21	2.2
207-08-9	Benzo(k)fluoranthene	U	21	1.0	20	21	1.4
50-32-8	Benzo(a)pyrene	U	21	1.0	20	21	0.80
193-39-5	Indeno(1,2,3-cd)pyrene	U	21	1.0	20	21	2.1
53-70-3	Dibenzo(a,h)anthracene	U	21	1.0	20	21	2.1
191-24-2	Benzo(g,h,i)perylene	U	21	1.0	20	21	1.8
7297-45-2	2-Methylnaphthalene-d10		64%				
81103-79-9	Fluorene-d10		81%				
1718-52-1	Pyrene-d10		106%				

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Tetra Tech NUS, Inc
Project: CTO 303 NS MAYPORT
PO No:
Sample Date: 11/25/03
Received Date: 11/26/03
Extraction Date: 12/04/03
Analysis Date: 12/12/03
Report Date: 12/22/2003
Matrix: SOIL
% Solids: 94.3

Lab ID: WT3024-9
Client ID: MPT-250-SB30-03
SDG: WT3024
Extracted by: NB
Extraction Method: SW846 3550
Analyst: SAW
Analysis Method: SW846 M8100
Lab Prep Batch: WG4950
Units: mg/Kg

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
	Petroleum Range Organics	B	28	1.0	20	21	1.5
	n-Triacontane-D62		108%				
	O-Terphenyl		85%				

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Tetra Tech NUS, Inc
Project: CTO 303 NS MAYPORT
PO No:
Sample Date: 11/25/03
Received Date: 11/26/03
Extraction Date: 12/02/03
Analysis Date: 12/08/03
Report Date: 12/18/2003
Matrix: SOIL
% Solids: 94.3

Lab ID: WT3024-10
Client ID: MPT-250-SB31-03
SDG: WT3024
Extracted by: LS
Extraction Method: SW846 3550
Analyst: JCG
Analysis Method: SW846 M8270C
Lab Prep Batch: WG4893
Units: ug/Kg

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
91-20-3	Naphthalene	U	21	1.0	20	21	0.94
91-57-6	2-Methylnaphthalene	U	21	1.0	20	21	0.59
90-12-0	1-Methylnaphthalene	U	21	1.0	20	21	0.59
208-96-8	Acenaphthylene	U	21	1.0	20	21	0.56
83-32-9	Acenaphthene	U	21	1.0	20	21	0.74
86-73-7	Fluorene	U	21	1.0	20	21	0.65
85-01-8	Phenanthrene	U	21	1.0	20	21	1.6
120-12-7	Anthracene	U	21	1.0	20	21	0.86
206-44-0	Fluoranthene	U	21	1.0	20	21	1.7
129-00-0	Pyrene	U	21	1.0	20	21	1.9
56-55-3	Benzo(a)anthracene	U	21	1.0	20	21	1.1
218-01-9	Chrysene	U	21	1.0	20	21	1.3
205-99-2	Benzo(b)fluoranthene	U	21	1.0	20	21	2.2
207-08-9	Benzo(k)fluoranthene	U	21	1.0	20	21	1.4
50-32-8	Benzo(a)pyrene	U	21	1.0	20	21	0.80
193-39-5	Indeno(1,2,3-cd)pyrene	U	21	1.0	20	21	2.1
53-70-3	Dibenzo(a,h)anthracene	U	21	1.0	20	21	2.1
191-24-2	Benzo(g,h,i)perylene	U	21	1.0	20	21	1.8
7297-45-2	2-Methylnaphthalene-d10		78%				
81103-79-9	Fluorene-d10		83%				
1718-52-1	Pyrene-d10		117%				

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Tetra Tech NUS, Inc
Project: CTO 303 NS MAYPORT
PO No:
Sample Date: 11/25/03
Received Date: 11/26/03
Extraction Date: 12/04/03
Analysis Date: 12/12/03
Report Date: 12/22/2003
Matrix: SOIL
% Solids: 94.3

Lab ID: WT3024-10
Client ID: MPT-250-SB31-03
SDG: WT3024
Extracted by: NB
Extraction Method: SW846 3550
Analyst: SAW
Analysis Method: SW846 M8100
Lab Prep Batch: WG4950
Units: mg/Kg

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
	Petroleum Range Organics	JB	5.4	1.0	20	21	1.5
	n-Triacontane-D62		*131%				
	O-Terphenyl		101%				

PROJ_NO: 5863

SDG: WT3024 MEDIA: SOIL DATA FRACTION: PAH

nsample	MPT-250-SB22-01
samp_date	11/25/2003
lab_id	WT3024-1RA
qc_type	NM
units	UG/KG
Pct_Solids	89.7
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1-METHYLNAPHTHALENE	22	U	
2-METHYLNAPHTHALENE	22	U	
ACENAPHTHENE	22	U	
ACENAPHTHYLENE	22	U	
ANTHRACENE	22	U	
BENZO(A)ANTHRACENE	22	U	
BENZO(A)PYRENE	22	U	
BENZO(B)FLUORANTHENE	22	U	
BENZO(G,H,I)PERYLENE	22	U	
BENZO(K)FLUORANTHENE	22	U	
CHRYSENE	22	U	
DIBENZO(A,H)ANTHRACENE	22	U	
FLUORANTHENE	22	U	
FLUORENE	22	U	
INDENO(1,2,3-CD)PYRENE	22	U	
NAPHTHALENE	22	U	
PHENANTHRENE	22	U	
PYRENE	22	U	

nsample	MPT-250-SB23-01
samp_date	11/25/2003
lab_id	WT3024-2
qc_type	NM
units	UG/KG
Pct_Solids	95.8
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1-METHYLNAPHTHALENE	21	U	
2-METHYLNAPHTHALENE	21	U	
ACENAPHTHENE	21	U	
ACENAPHTHYLENE	21	U	
ANTHRACENE	21	U	
BENZO(A)ANTHRACENE	21	U	
BENZO(A)PYRENE	21	U	
BENZO(B)FLUORANTHENE	21	U	
BENZO(G,H,I)PERYLENE	21	U	
BENZO(K)FLUORANTHENE	21	U	
CHRYSENE	21	U	
DIBENZO(A,H)ANTHRACENE	21	U	
FLUORANTHENE	21	U	
FLUORENE	21	U	
INDENO(1,2,3-CD)PYRENE	21	U	
NAPHTHALENE	21	U	
PHENANTHRENE	21	U	
PYRENE	21	U	

nsample	MPT-250-SB24-01
samp_date	11/25/2003
lab_id	WT3024-3DL2
qc_type	NM
units	UG/KG
Pct_Solids	97.5
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1-METHYLNAPHTHALENE	41	U	
2-METHYLNAPHTHALENE	41	U	
ACENAPHTHENE	41	U	
ACENAPHTHYLENE	41	U	
ANTHRACENE	41	U	
BENZO(A)ANTHRACENE	41	U	
BENZO(A)PYRENE	41	U	
BENZO(B)FLUORANTHENE	41	U	
BENZO(G,H,I)PERYLENE	41	U	
BENZO(K)FLUORANTHENE	41	U	
CHRYSENE	41	U	
DIBENZO(A,H)ANTHRACENE	41	U	
FLUORANTHENE	41	U	
FLUORENE	41	U	
INDENO(1,2,3-CD)PYRENE	41	U	
NAPHTHALENE	41	U	
PHENANTHRENE	41	U	
PYRENE	41	U	

PROJ_NO: 5863

SDG: WT3024 MEDIA: SOIL DATA FRACTION: PAH

nsample	MPT-250-SB25-01	nsample	MPT-250-SB26-01	nsample	MPT-250-SB27-01
samp_date	11/25/2003	samp_date	11/25/2003	samp_date	11/25/2003
lab_id	WT3024-4	lab_id	WT3024-5	lab_id	WT3024-6
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	95.6	Pct_Solids	95.5	Pct_Solids	94.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code	Parameter	Result	Val Qual	Qual Code	Parameter	Result	Val Qual	Qual Code
1-METHYLNAPHTHALENE	21	U		1-METHYLNAPHTHALENE	21	U		1-METHYLNAPHTHALENE	21	U	
2-METHYLNAPHTHALENE	21	U		2-METHYLNAPHTHALENE	21	U		2-METHYLNAPHTHALENE	21	U	
ACENAPHTHENE	21	U		ACENAPHTHENE	21	U		ACENAPHTHENE	21	U	
ACENAPHTHYLENE	21	U		ACENAPHTHYLENE	21	U		ACENAPHTHYLENE	21	U	
ANTHRACENE	21	U		ANTHRACENE	21	U		ANTHRACENE	21	U	
BENZO(A)ANTHRACENE	21	U		BENZO(A)ANTHRACENE	21	U		BENZO(A)ANTHRACENE	21	U	
BENZO(A)PYRENE	21	U		BENZO(A)PYRENE	21	U		BENZO(A)PYRENE	21	U	
BENZO(B)FLUORANTHENE	21	U		BENZO(B)FLUORANTHENE	21	U		BENZO(B)FLUORANTHENE	21	U	
BENZO(G,H,I)PERYLENE	21	U		BENZO(G,H,I)PERYLENE	21	U		BENZO(G,H,I)PERYLENE	21	U	
BENZO(K)FLUORANTHENE	21	U		BENZO(K)FLUORANTHENE	21	U		BENZO(K)FLUORANTHENE	21	U	
CHRYSENE	21	U		CHRYSENE	21	U		CHRYSENE	21	U	
DIBENZO(A,H)ANTHRACENE	21	U		DIBENZO(A,H)ANTHRACENE	21	U		DIBENZO(A,H)ANTHRACENE	21	U	
FLUORANTHENE	21	U		FLUORANTHENE	21	U		FLUORANTHENE	21	U	
FLUORENE	21	U		FLUORENE	21	U		FLUORENE	21	U	
INDENO(1,2,3-CD)PYRENE	21	U		INDENO(1,2,3-CD)PYRENE	21	U		INDENO(1,2,3-CD)PYRENE	21	U	
NAPHTHALENE	21	U		NAPHTHALENE	21	U		NAPHTHALENE	21	U	
PHENANTHRENE	21	U		PHENANTHRENE	21	U		PHENANTHRENE	21	U	
PYRENE	21	U		PYRENE	21	U		PYRENE	21	U	

PROJ_NO: 5863

SDG: WT3024 MEDIA: SOIL DATA FRACTION: PAH

nsample	MPT-250-SB28-03
samp_date	11/25/2003
lab_id	WT3024-7
qc_type	NM
units	UG/KG
Pct_Solids	91.5
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1-METHYLNAPHTHALENE	22	U	
2-METHYLNAPHTHALENE	22	U	
ACENAPHTHENE	22	U	
ACENAPHTHYLENE	22	U	
ANTHRACENE	22	U	
BENZO(A)ANTHRACENE	22	U	
BENZO(A)PYRENE	22	U	
BENZO(B)FLUORANTHENE	22	U	
BENZO(G,H,I)PERYLENE	22	U	
BENZO(K)FLUORANTHENE	22	U	
CHRYSENE	22	U	
DIBENZO(A,H)ANTHRACENE	22	U	
FLUORANTHENE	22	U	
FLUORENE	22	U	
INDENO(1,2,3-CD)PYRENE	22	U	
NAPHTHALENE	22	U	
PHENANTHRENE	22	U	
PYRENE	22	U	

nsample	MPT-250-SB29-03
samp_date	11/25/2003
lab_id	WT3024-8DL2
qc_type	NM
units	UG/KG
Pct_Solids	92.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1-METHYLNAPHTHALENE	2200	U	
2-METHYLNAPHTHALENE	2200	U	
ACENAPHTHENE	2200	U	
ACENAPHTHYLENE	2200	U	
ANTHRACENE	2200	U	
BENZO(A)ANTHRACENE	2200	U	
BENZO(A)PYRENE	2200	U	
BENZO(B)FLUORANTHENE	2200	U	
BENZO(G,H,I)PERYLENE	2200	U	
BENZO(K)FLUORANTHENE	2200	U	
CHRYSENE	2200	U	
DIBENZO(A,H)ANTHRACENE	2200	U	
FLUORANTHENE	2200	U	
FLUORENE	2200	U	
INDENO(1,2,3-CD)PYRENE	2200	U	
NAPHTHALENE	2200	U	
PHENANTHRENE	2200	U	
PYRENE	2200	U	

nsample	MPT-250-SB30-03
samp_date	11/25/2003
lab_id	WT3024-9
qc_type	NM
units	UG/KG
Pct_Solids	94.3
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1-METHYLNAPHTHALENE	21	U	
2-METHYLNAPHTHALENE	21	U	
ACENAPHTHENE	21	U	
ACENAPHTHYLENE	21	U	
ANTHRACENE	21	U	
BENZO(A)ANTHRACENE	21	U	
BENZO(A)PYRENE	21	U	
BENZO(B)FLUORANTHENE	21	U	
BENZO(G,H,I)PERYLENE	21	U	
BENZO(K)FLUORANTHENE	21	U	
CHRYSENE	21	U	
DIBENZO(A,H)ANTHRACENE	21	U	
FLUORANTHENE	21	U	
FLUORENE	21	U	
INDENO(1,2,3-CD)PYRENE	21	U	
NAPHTHALENE	21	U	
PHENANTHRENE	21	U	
PYRENE	21	U	

PROJ_NO: 5863

SDG: WT3024 MEDIA: SOIL DATA FRACTION: PAH

nsample	MPT-250-SB31-03
samp_date	11/25/2003
lab_id	WT3024-10
qc_type	NM
units	UG/KG
Pct_Solids	94.3
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1-METHYLNAPHTHALENE	21	U	
2-METHYLNAPHTHALENE	21	U	
ACENAPHTHENE	21	U	
ACENAPHTHYLENE	21	U	
ANTHRACENE	21	U	
BENZO(A)ANTHRACENE	21	U	
BENZO(A)PYRENE	21	U	
BENZO(B)FLUORANTHENE	21	U	
BENZO(G,H,I)PERYLENE	21	U	
BENZO(K)FLUORANTHENE	21	U	
CHRYSENE	21	U	
DIBENZO(A,H)ANTHRACENE	21	U	
FLUORANTHENE	21	U	
FLUORENE	21	U	
INDENO(1,2,3-CD)PYRENE	21	U	
NAPHTHALENE	21	U	
PHENANTHRENE	21	U	
PYRENE	21	U	

PROJ_NO: 5863

SDG: WT3024 MEDIA: SOIL DATA FRACTION: PET

nsample	MPT-250-SB22-01
samp_date	11/25/2003
lab_id	WT3024-1DL
qc_type	NM
units	MG/KG
Pct_Solids	89.7
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TOTAL PETROLEUM HYDROCARBONS	1100		

nsample	MPT-250-SB23-01
samp_date	11/25/2003
lab_id	WT3024-2
qc_type	NM
units	MG/KG
Pct_Solids	95.8
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TOTAL PETROLEUM HYDROCARBONS	130		

nsample	MPT-250-SB24-01
samp_date	11/25/2003
lab_id	WT3024-3
qc_type	NM
units	MG/KG
Pct_Solids	97.5
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TOTAL PETROLEUM HYDROCARBONS	75		

PROJ_NO: 5863

SDG: WT3024 MEDIA: SOIL DATA FRACTION: PET

nsample	MPT-250-SB25-01
samp_date	11/25/2003
lab_id	WT3024-4DL
qc_type	NM
units	MG/KG
Pct_Solids	95.6
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TOTAL PETROLEUM HYDROCARBONS	270		

nsample	MPT-250-SB26-01
samp_date	11/25/2003
lab_id	WT3024-5
qc_type	NM
units	MG/KG
Pct_Solids	95.5
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TOTAL PETROLEUM HYDROCARBONS	26		

nsample	MPT-250-SB27-01
samp_date	11/25/2003
lab_id	WT3024-6DL
qc_type	NM
units	MG/KG
Pct_Solids	94.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TOTAL PETROLEUM HYDROCARBONS	200		

PROJ_NO: 5863

SDG: WT3024 MEDIA: SOIL DATA FRACTION: PET

nsample	MPT-250-SB28-03
samp_date	11/25/2003
lab_id	WT3024-7
qc_type	NM
units	MG/KG
Pct_Solids	91.5
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TOTAL PETROLEUM HYDROCARBONS	22	U	A

nsample	MPT-250-SB29-03
samp_date	11/25/2003
lab_id	WT3024-8DL
qc_type	NM
units	MG/KG
Pct_Solids	92.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TOTAL PETROLEUM HYDROCARBONS	12000		

nsample	MPT-250-SB30-03
samp_date	11/25/2003
lab_id	WT3024-9
qc_type	NM
units	MG/KG
Pct_Solids	94.3
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TOTAL PETROLEUM HYDROCARBONS	28		

PROJ_NO: 5863

SDG: WT3024 MEDIA: SOIL DATA FRACTION: PET

nsample	MPT-250-SB31-03
samp_date	11/25/2003
lab_id	WT3024-10
qc_type	NM
units	MG/KG
Pct_Solids	94.3
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TOTAL PETROLEUM HYDROCARBONS	21	U	A

PROJ_NO: 5863

SDG: WT3024 MEDIA: SOIL DATA FRACTION: MISC

nsample	MPT-250-SB22-01
samp_date	11/25/2003
lab_id	WT3024-1
qc_type	NM
Pct_Solids	
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
TOTAL SOLIDS	%	90		

nsample	MPT-250-SB23-01
samp_date	11/25/2003
lab_id	WT3024-2
qc_type	NM
Pct_Solids	
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
TOTAL SOLIDS	%	96		

nsample	MPT-250-SB24-01
samp_date	11/25/2003
lab_id	WT3024-3
qc_type	NM
Pct_Solids	
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
TOTAL SOLIDS	%	98		

PROJ_NO: 5863

SDG: WT3024 MEDIA: SOIL DATA FRACTION: MISC

nsample	MPT-250-SB25-01
samp_date	11/25/2003
lab_id	WT3024-4
qc_type	NM
Pct_Solids	
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
TOTAL SOLIDS	%	96		

nsample	MPT-250-SB26-01
samp_date	11/25/2003
lab_id	WT3024-5
qc_type	NM
Pct_Solids	
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
TOTAL SOLIDS	%	95		

nsample	MPT-250-SB27-01
samp_date	11/25/2003
lab_id	WT3024-6
qc_type	NM
Pct_Solids	
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
TOTAL SOLIDS	%	94		

PROJ_NO: 5863

SDG: WT3024 MEDIA: SOIL DATA FRACTION: MISC

nsample	MPT-250-SB28-03
samp_date	11/25/2003
lab_id	WT3024-7
qc_type	NM
Pct_Solids	
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
TOTAL SOLIDS	%	91		

nsample	MPT-250-SB29-03
samp_date	11/25/2003
lab_id	WT3024-8
qc_type	NM
Pct_Solids	
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
TOTAL SOLIDS	%	92		

nsample	MPT-250-SB30-03
samp_date	11/25/2003
lab_id	WT3024-9
qc_type	NM
Pct_Solids	
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
TOTAL SOLIDS	%	94		

PROJ_NO: 5863

SDG: WT3024 MEDIA: SOIL DATA FRACTION: MISC

nsample	MPT-250-SB31-03
samp_date	11/25/2003
lab_id	WT3024-10
qc_type	NM
Pct_Solids	
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
TOTAL SOLIDS	%	94		

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Tetra Tech NUS, Inc
Project: CTO 303 NS MAYPORT
PO No:
Sample Date: 11/25/03
Received Date: 11/26/03
Extraction Date: 12/02/03
Analysis Date: 12/17/03
Report Date: 12/18/2003
Matrix: SOIL
% Solids: 89.7

Lab ID: WT3024-1RA
Client ID: MPT-250-SB22-01
SDG: WT3024
Extracted by: LS
Extraction Method: SW846 3550
Analyst: JCG
Analysis Method: SW846 M8270C
Lab Prep Batch: WG4893
Units: ug/Kg

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
91-20-3	Naphthalene	U	22	1.0	20	22	0.99
91-57-6	2-Methylnaphthalene	U	22	1.0	20	22	0.62
90-12-0	1-Methylnaphthalene	U	22	1.0	20	22	0.62
208-96-8	Acenaphthylene	U	22	1.0	20	22	0.59
83-32-9	Acenaphthene	U	22	1.0	20	22	0.78
86-73-7	Fluorene	U	22	1.0	20	22	0.68
85-01-8	Phenanthrene	U	22	1.0	20	22	1.6
120-12-7	Anthracene	U	22	1.0	20	22	0.90
206-44-0	Fluoranthene	U	22	1.0	20	22	1.8
129-00-0	Pyrene	U	22	1.0	20	22	2.0
56-55-3	Benzo(a)anthracene	U	22	1.0	20	22	1.1
218-01-9	Chrysene	U	22	1.0	20	22	1.4
205-99-2	Benzo(b)fluoranthene	U	22	1.0	20	22	2.3
207-08-9	Benzo(k)fluoranthene	U	22	1.0	20	22	1.5
50-32-8	Benzo(a)pyrene	U	22	1.0	20	22	0.84
193-39-5	Indeno(1,2,3-cd)pyrene	U	22	1.0	20	22	2.2
53-70-3	Dibenzo(a,h)anthracene	U	22	1.0	20	22	2.2
191-24-2	Benzo(g,h,i)perylene	U	22	1.0	20	22	1.9
7297-45-2	2-Methylnaphthalene-d10		94%				
81103-79-9	Fluorene-d10		106%				
1718-52-1	Pyrene-d10		120%				

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Tetra Tech NUS, Inc
Project: CTO 303 NS MAYPORT
PO No:
Sample Date: 11/25/03
Received Date: 11/26/03
Extraction Date: 12/02/03
Analysis Date: 12/09/03
Report Date: 12/18/2003
Matrix: SOIL
% Solids: 95.8

Lab ID: WT3024-2
Client ID: MPT-250-SB23-01
SDG: WT3024
Extracted by: LS
Extraction Method: SW846 3550
Analyst: JCG
Analysis Method: SW846 M8270C
Lab Prep Batch: WG4893
Units: ug/Kg

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
91-20-3	Naphthalene	U	21	1.0	20	21	0.93
91-57-6	2-Methylnaphthalene	U	21	1.0	20	21	0.58
90-12-0	1-Methylnaphthalene	U	21	1.0	20	21	0.58
208-96-8	Acenaphthylene	U	21	1.0	20	21	0.55
83-32-9	Acenaphthene	U	21	1.0	20	21	0.73
86-73-7	Fluorene	U	21	1.0	20	21	0.64
85-01-8	Phenanthrene	U	21	1.0	20	21	1.5
120-12-7	Anthracene	U	21	1.0	20	21	0.84
206-44-0	Fluoranthene	U	21	1.0	20	21	1.7
129-00-0	Pyrene	U	21	1.0	20	21	1.9
56-55-3	Benzo(a)anthracene	U	21	1.0	20	21	1.0
218-01-9	Chrysene	U	21	1.0	20	21	1.3
205-99-2	Benzo(b)fluoranthene	U	21	1.0	20	21	2.1
207-08-9	Benzo(k)fluoranthene	U	21	1.0	20	21	1.4
50-32-8	Benzo(a)pyrene	U	21	1.0	20	21	0.78
193-39-5	Indeno(1,2,3-cd)pyrene	U	21	1.0	20	21	2.1
53-70-3	Dibenzo(a,h)anthracene	U	21	1.0	20	21	2.1
191-24-2	Benzo(g,h,i)perylene	U	21	1.0	20	21	1.8
7297-45-2	2-Methylnaphthalene-d10		76%				
81103-79-9	Fluorene-d10		76%				
1718-52-1	Pyrene-d10		116%				

CLIENT : Tetra Tech NUS
ADDRESS: 8640 Philips Highway
Suite 16
Jacksonville, FL 32256

REPORT # : JAX39731
DATE SUBMITTED: May 12, 2004
DATE REPORTED : PRELIMINARY

ATTENTION: Mr. Mark Peterson

SAMPLE IDENTIFICATION

Samples submitted and
identified by client as:

REFERENCE: 5863

SITE 250

JAX39731-1	: MPT-250-SB-32-(1)	@ 09:40	(05/11/04)
JAX39731-2	: MPT-250-SB-32-(3)	@ 09:45	(05/11/04)
JAX39731-3	: MPT-250-SB-33-(1)	@ 09:50	(05/11/04)
JAX39731-4	: MPT-250-SB-33-(3)	@ 09:55	(05/11/04)
JAX39731-5	: MPT-250-SB-34-(1)	@ 10:05	(05/11/04)
JAX39731-6	: MPT-250-SB-34-(2.5)	@ 10:10	(05/11/04)
JAX39731-7	: MPT-250-SB-35-(1)	@ 10:20	(05/11/04)
JAX39731-8	: MPT-250-SB-35-(3)	@ 10:30	(05/11/04)
JAX39731-9	: MPT-250-SB-36-(1)	@ 10:12	(05/12/04)
JAX39731-10	: MPT-250-SB-36-(3)	@ 10:16	(05/12/04)
JAX39731-11	: MPT-250-SB-37-(1)	@ 10:29	(05/12/04)
JAX39731-12	: MPT-250-SB-37-(3)	@ 10:33	(05/12/04)

Not Analyzed (D.S)

& SB-38 Not Analyzed

RESULTS OF ANALYSIS

EPA METHOD 8270 - PAH Compounds by SIM	MPT-250-SB-32-(1)	MPT-250-SB-32-(3)	Units
Naphthalene	37 U	37 U	ug/Kg
2-Methylnaphthalene	37 U	37 U	ug/Kg
1-Methylnaphthalene	37 U	37 U	ug/Kg
Acenaphthylene	37 U	37 U	ug/Kg
Acenaphthene	37 U	37 U	ug/Kg
Fluorene	37 U	37 U	ug/Kg
Phenanthrene	37 U	**280**	ug/Kg
Anthracene	37 U	37 U	ug/Kg
Fluoranthene	**44**	**110**	ug/Kg
Pyrene	37 U	**880**	ug/Kg
Chrysene	37 U	**110**	ug/Kg
Benzo(a)anthracene	37 U	**44**	ug/Kg
Benzo(b)fluoranthene	**41**	37 U	ug/Kg
Benzo(k)fluoranthene	37 U	37 U	ug/Kg
Benzo(a)pyrene	37 U	37 U	ug/Kg
Indeno(1,2,3-cd)pyrene	37 U	37 U	ug/Kg
Dibenzo(a,h)anthracene	37 U	37 U	ug/Kg
Benzo(g,h,i)perylene	37 U	37 U	ug/Kg
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
p-Terphenyl	62	86	19-162
Date Prepared	05/13/04	05/13/04	
Date Analyzed	05/17/04 17:55	05/17/04 18:22	

Miscellaneous	METHOD	MPT-250-SB-32-(1)	MPT-250-SB-32-(3)	Units
Percent Solids	WETS/72	**90**	**90**	%
Date Prepared		05/13/04	05/13/04	
Date Analyzed		05/13/04 13:00	05/13/04 13:00	

U = Compound was analyzed for but not detected to the level shown.

RESULTS OF ANALYSIS

EPA METHOD FLPRO - PETROL. RESIDUAL ORG.	MPT-250-SB-32-(1)		MPT-250-SB-32-(3)		Units
Hydrocarbons (C8-C40)	**110**	D1	**7300**	D2	mg/Kg
Surrogate:	**% RECOV**		**% RECOV**		**LIMITS**
o-Terphenyl	92		0 U		51-148
Nonatriacontane	103		128		36-152
Date Prepared	05/14/04		05/14/04		
Date Analyzed	05/18/04 15:04		05/18/04 08:10		

U = Compound was analyzed for but not detected to the level shown.
D1 = Analyte value determined from a 1:2 dilution.
D2 = Analyte value determined from a 1:5 dilution.

ENCO LABORATORIES
REPORT # : JAX39731
DATE REPORTED: PRELIMINARY
REFERENCE : 5863
PROJECT NAME : SITE 250

RESULTS OF ANALYSIS

EPA METHOD 8270 - PAH Compounds by SIM	MPT-250-SB-33-(1)	MPT-250-SB-33-(3)	Units
Naphthalene	34 U	35 U	ug/Kg
2-Methylnaphthalene	34 U	35 U	ug/Kg
1-Methylnaphthalene	34 U	35 U	ug/Kg
Acenaphthylene	34 U	35 U	ug/Kg
Acenaphthene	34 U	35 U	ug/Kg
Fluorene	34 U	35 U	ug/Kg
Phenanthrene	34 U	35 U	ug/Kg
Anthracene	34 U	35 U	ug/Kg
Fluoranthene	**40**	**200**	ug/Kg
Pyrene	34 U	**170**	ug/Kg
Chrysene	**37**	**56**	ug/Kg
Benzo(a)anthracene	34 U	35 U	ug/Kg
Benzo(b)fluoranthene	**64**	**81**	ug/Kg
Benzo(k)fluoranthene	34 U	**39**	ug/Kg
Benzo(a)pyrene	**40**	35 U	ug/Kg
Indeno(1,2,3-cd)pyrene	34 U	35 U	ug/Kg
Dibenzo(a,h)anthracene	34 U	35 U	ug/Kg
Benzo(g,h,i)perylene	34 U	**50**	ug/Kg
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
p-Terphenyl	75	162	19-162
Date Prepared	05/13/04	05/13/04	
Date Analyzed	05/17/04 18:50	05/17/04 19:17	

Miscellaneous	METHOD	MPT-250-SB-33-(1)	MPT-250-SB-33-(3)	Units
Percent Solids	WETS/72	**99**	**94**	%
Date Prepared		05/13/04	05/13/04	
Date Analyzed		05/13/04 13:00	05/13/04 13:00	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JAX39731
DATE REPORTED: PRELIMINARY
REFERENCE : 5863
PROJECT NAME : SITE 250

RESULTS OF ANALYSIS

EPA METHOD FLPRO - PETROL. RESIDUAL ORG.	**MPT-250-SB-33-(1)**	**MPT-250-SB-33-(3)**	**Units**
Hydrocarbons (C8-C40)	**21**	**48**	mg/Kg
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
o-Terphenyl	76	83	51-148
Nonatriacontane	90	102	36-152
Date Prepared	05/14/04	05/14/04	
Date Analyzed	05/18/04 12:47	05/18/04 15:24	

RESULTS OF ANALYSIS

EPA METHOD 8270 - PAH Compounds by SIM	MPT-250-SB-34-(1)	MPT-250-SB-34-(2.5)	Units
Naphthalene	35 U	41 U	ug/Kg
2-Methylnaphthalene	35 U	41 U	ug/Kg
1-Methylnaphthalene	35 U	41 U	ug/Kg
Acenaphthylene	35 U	41 U	ug/Kg
Acenaphthene	35 U	41 U	ug/Kg
Fluorene	35 U	41 U	ug/Kg
Phenanthrene	35 U	41 U	ug/Kg
Anthracene	35 U	41 U	ug/Kg
Fluoranthene	35 U	41 U	ug/Kg
Pyrene	35 U	41 U	ug/Kg
Chrysene	35 U	41 U	ug/Kg
Benzo(a)anthracene	35 U	41 U	ug/Kg
Benzo(b)fluoranthene	35 U	41 U	ug/Kg
Benzo(k)fluoranthene	35 U	41 U	ug/Kg
Benzo(a)pyrene	35 U	41 U	ug/Kg
Indeno(1,2,3-cd)pyrene	35 U	41 U	ug/Kg
Dibenzo(a,h)anthracene	35 U	41 U	ug/Kg
Benzo(g,h,i)perylene	35 U	41 U	ug/Kg
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
p-Terphenyl	101	140	19-162
Date Prepared	05/13/04	05/13/04	
Date Analyzed	05/17/04 19:44	05/17/04 20:12	

Miscellaneous	METHOD	MPT-250-SB-34-(1)	MPT-250-SB-34-(2.5)	Units
Percent Solids	WETS/72	**95**	**82**	%
Date Prepared		05/13/04	05/13/04	
Date Analyzed		05/13/04 13:00	05/13/04 13:00	

U = Compound was analyzed for but not detected to the level shown.

RESULTS OF ANALYSIS

EPA METHOD FLPRO - PETROL. RESIDUAL ORG.	MPT-250-SB-34-(1)	MPT-250-SB-34-(2.5)	Units
Hydrocarbons (C8-C40)	**7.7**	8.0 U	mg/Kg
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
o-Terphenyl	88	86	51-148
Nonatriacontane	102	96	36-152
Date Prepared	05/14/04	05/14/04	
Date Analyzed	05/18/04 13:08	05/18/04 03:46	

U = Compound was analyzed for but not detected to the level shown.

CLIENT : Tetra Tech NUS	**REPORT #** : JAX39731
ADDRESS: 8640 Philips Highway	**DATE SUBMITTED**: May 12, 2004
Suite 16	**DATE REPORTED** : May 27, 2004
Jacksonville, FL 32256	
	PAGE 2 OF 18

ATTENTION: Mr. Mark Peterson

SAMPLE IDENTIFICATION

Samples submitted and
identified by client as:

REFERENCE: 5863

SITE 250

		MPT-250-SB-36 (1)	10:12	(05/12/04)
JAX39731-10	:	MPT-250-SB-36-(3)	@ 10:16	(05/12/04)
JAX39731-11	:	MPT-250-SB-37-(1)	@ 10:29	(05/12/04)
JAX39731-12	:	MPT-250-SB-37-(3)	@ 10:33	(05/12/04)
JAX39731-13	:	MPT-250-SB-38-(1)	@ 10:54	(05/12/04)
JAX39731-14	:	MPT-250-SB-38-(2.5)	@ 10:57	(05/12/04)

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. This data has been produced in accordance with NELAC Standards (May, 2001). This report shall not be reproduced except in full, without the written approval of the laboratory. Results for these procedures apply only to the samples as submitted.

Note: Analytical values are reported on a dry weight basis.

PROJECT MANAGER ________________________________
Scott D. Martin

RESULTS OF ANALYSIS

EPA METHOD 8270 - PAH Compounds by SIM	MPT-250-SB-32-(1)	MPT-250-SB-32-(3)	Units
Naphthalene	37 U	37 U	ug/Kg
2-Methylnaphthalene	37 U	37 U	ug/Kg
1-Methylnaphthalene	37 U	37 U	ug/Kg
Acenaphthylene	37 U	37 U	ug/Kg
Acenaphthene	37 U	37 U	ug/Kg
Fluorene	37 U	37 U	ug/Kg
Phenanthrene	37 U	**280**	ug/Kg
Anthracene	37 U	37 U	ug/Kg
Fluoranthene	**44**	**110**	ug/Kg
Pyrene	37 U	**880**	ug/Kg
Chrysene	37 U	**110**	ug/Kg
Benzo(a)anthracene	37 U	**44**	ug/Kg
Benzo(b)fluoranthene	**41**	37 U	ug/Kg
Benzo(k)fluoranthene	37 U	37 U	ug/Kg
Benzo(a)pyrene	37 U	37 U	ug/Kg
Indeno(1,2,3-cd)pyrene	37 U	37 U	ug/Kg
Dibenzo(a,h)anthracene	37 U	37 U	ug/Kg
Benzo(g,h,i)perylene	37 U	37 U	ug/Kg
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
p-Terphenyl	62	86	19-162
Date Prepared	05/13/04	05/13/04	
Date Analyzed	05/17/04 17:55	05/17/04 18:22	

Miscellaneous	METHOD	MPT-250-SB-32-(1)	MPT-250-SB-32-(3)	Units
Percent Solids	WETS/72	**90**	**90**	%
Date Prepared		05/13/04	05/13/04	
Date Analyzed		05/13/04 13:00	05/13/04 13:00	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JAX39731
DATE REPORTED: May 27, 2004
REFERENCE : 5863
PROJECT NAME : SITE 250

RESULTS OF ANALYSIS

EPA METHOD FLPRO - PETROL. RESIDUAL ORG.	MPT-250-SB-32-(1)		MPT-250-SB-32-(3)		Units
Hydrocarbons (C8-C40)	**110**	D1	**7300**	D2	mg/Kg
Surrogate:	**% RECOV**		**% RECOV**		**LIMITS**
o-Terphenyl	92		*		51-148
Nonatriacontane	103		128		36-152
Date Prepared	05/14/04		05/14/04		
Date Analyzed	05/18/04 15:04		05/18/04 08:10		

* = Surrogate unavailable due to matrix interference.
U = Compound was analyzed for but not detected to the level shown.
D1 = Analyte value determined from a 1:2 dilution.
D2 = Analyte value determined from a 1:5 dilution.

ENCO LABORATORIES
REPORT # : JAX39731
DATE REPORTED: May 27, 2004
REFERENCE : 5863
PROJECT NAME : SITE 250

RESULTS OF ANALYSIS

EPA METHOD 8270 - PAH Compounds by SIM	MPT-250-SB-33-(1)	MPT-250-SB-33-(3)	Units
Naphthalene	34 U	35 U	ug/Kg
2-Methylnaphthalene	34 U	35 U	ug/Kg
1-Methylnaphthalene	34 U	35 U	ug/Kg
Acenaphthylene	34 U	35 U	ug/Kg
Acenaphthene	34 U	35 U	ug/Kg
Fluorene	34 U	35 U	ug/Kg
Phenanthrene	34 U	35 U	ug/Kg
Anthracene	34 U	35 U	ug/Kg
Fluoranthene	**40**	**200**	ug/Kg
Pyrene	34 U	**170**	ug/Kg
Chrysene	**37**	**56**	ug/Kg
Benzo(a)anthracene	34 U	35 U	ug/Kg
Benzo(b)fluoranthene	**64**	**81**	ug/Kg
Benzo(k)fluoranthene	34 U	**39**	ug/Kg
Benzo(a)pyrene	**40**	35 U	ug/Kg
Indeno(1,2,3-cd)pyrene	34 U	35 U	ug/Kg
Dibenzo(a,h)anthracene	34 U	35 U	ug/Kg
Benzo(g,h,i)perylene	34 U	**50**	ug/Kg
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
p-Terphenyl	75	162	19-162
Date Prepared	05/13/04	05/13/04	
Date Analyzed	05/17/04 18:50	05/17/04 19:17	

Miscellaneous	METHOD	MPT-250-SB-33-(1)	MPT-250-SB-33-(3)	Units
Percent Solids	WETS/72	**99**	**94**	%
Date Prepared		05/13/04	05/13/04	
Date Analyzed		05/13/04 13:00	05/13/04 13:00	

U = Compound was analyzed for but not detected to the level shown.

RESULTS OF ANALYSIS

EPA METHOD FLPRO - PETROL. RESIDUAL ORG.	**MPT-250-SB-33-(1)**	**MPT-250-SB-33-(3)**	**Units**
Hydrocarbons (C8-C40)	**21**	**48**	mg/Kg
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
o-Terphenyl	76	83	51-148
Nonatriacontane	90	102	36-152
Date Prepared	05/14/04	05/14/04	
Date Analyzed	05/18/04 12:47	05/18/04 15:24	

RESULTS OF ANALYSIS

EPA METHOD 8270 - PAH Compounds by SIM	MPT-250-SB-34-(1)	MPT-250-SB-34-(2.5)	Units
Naphthalene	35 U	41 U	ug/Kg
2-Methylnaphthalene	35 U	41 U	ug/Kg
1-Methylnaphthalene	35 U	41 U	ug/Kg
Acenaphthylene	35 U	41 U	ug/Kg
Acenaphthene	35 U	41 U	ug/Kg
Fluorene	35 U	41 U	ug/Kg
Phenanthrene	35 U	41 U	ug/Kg
Anthracene	35 U	41 U	ug/Kg
Fluoranthene	35 U	41 U	ug/Kg
Pyrene	35 U	41 U	ug/Kg
Chrysene	35 U	41 U	ug/Kg
Benzo(a)anthracene	35 U	41 U	ug/Kg
Benzo(b)fluoranthene	35 U	41 U	ug/Kg
Benzo(k)fluoranthene	35 U	41 U	ug/Kg
Benzo(a)pyrene	35 U	41 U	ug/Kg
Indeno(1,2,3-cd)pyrene	35 U	41 U	ug/Kg
Dibenzo(a,h)anthracene	35 U	41 U	ug/Kg
Benzo(g,h,i)perylene	35 U	41 U	ug/Kg
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
p-Terphenyl	101	140	19-162
Date Prepared	05/13/04	05/13/04	
Date Analyzed	05/17/04 19:44	05/17/04 20:12	

Miscellaneous	METHOD	MPT-250-SB-34-(1)	MPT-250-SB-34-(2.5)	Units
Percent Solids	WETS/72	**95**	**82**	%
Date Prepared		05/13/04	05/13/04	
Date Analyzed		05/13/04 13:00	05/13/04 13:00	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JAX39731
DATE REPORTED: May 27, 2004
REFERENCE : 5863
PROJECT NAME : SITE 250

RESULTS OF ANALYSIS

EPA METHOD 8270 - PAH Compounds by SIM	MPT-250-SB-35-(1)	MPT-250-SB-35-(3)	Units
Naphthalene	35 U	36 U	ug/Kg
2-Methylnaphthalene	35 U	36 U	ug/Kg
1-Methylnaphthalene	35 U	36 U	ug/Kg
Acenaphthylene	35 U	36 U	ug/Kg
Acenaphthene	35 U	36 U	ug/Kg
Fluorene	35 U	36 U	ug/Kg
Phenanthrene	35 U	36 U	ug/Kg
Anthracene	35 U	36 U	ug/Kg
Fluoranthene	**140**	36 U	ug/Kg
Pyrene	**97**	36 U	ug/Kg
Chrysene	**110**	36 U	ug/Kg
Benzo(a)anthracene	**83**	36 U	ug/Kg
Benzo(b)fluoranthene	**160**	36 U	ug/Kg
Benzo(k)fluoranthene	**73**	36 U	ug/Kg
Benzo(a)pyrene	**97**	36 U	ug/Kg
Indeno(1,2,3-cd)pyrene	**86**	36 U	ug/Kg
Dibenzo(a,h)anthracene	35 U	36 U	ug/Kg
Benzo(g,h,i)perylene	**110**	36 U	ug/Kg
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
p-Terphenyl	63	50	19-162
Date Prepared	05/20/04	05/20/04	
Date Analyzed	05/27/04 05:45	05/27/04 06:12	

Miscellaneous	METHOD	MPT-250-SB-35-(1)	MPT-250-SB-35-(3)	Units
Percent Solids	WETS/72	**96**	**93**	%
Date Prepared		05/18/04	05/18/04	
Date Analyzed		05/19/04 12:55	05/19/04 12:55	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JAX39731
DATE REPORTED: May 27, 2004
REFERENCE : 5863
PROJECT NAME : SITE 250

RESULTS OF ANALYSIS

EPA METHOD FLPRO - PETROL. RESIDUAL ORG.	MPT-250-SB-35-(1)	MPT-250-SB-35-(3)	Units
Hydrocarbons (C8-C40)	**32**	7.1 U	mg/Kg
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
o-Terphenyl	84	82	51-148
Nonatriacontane	81	97	36-152
Date Prepared	05/20/04	05/20/04	
Date Analyzed	05/24/04 14:32	05/24/04 12:42	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JAX39731
DATE REPORTED: May 27, 2004
REFERENCE : 5863
PROJECT NAME : SITE 250

RESULTS OF ANALYSIS

EPA METHOD 8270 - PAH Compounds by SIM	MPT-250-SB-36-(1)			MPT-250-SB-36-(3)			Units
Naphthalene	71	U	D1	73	U	D1	ug/Kg
2-Methylnaphthalene	71	U	D1	73	U	D1	ug/Kg
1-Methylnaphthalene	71	U	D1	73	U	D1	ug/Kg
Acenaphthylene	71	U	D1	73	U	D1	ug/Kg
Acenaphthene	71	U	D1	73	U	D1	ug/Kg
Fluorene	71	U	D1	73	U	D1	ug/Kg
Phenanthrene	71	U	D1	73	U	D1	ug/Kg
Anthracene	71	U	D1	73	U	D1	ug/Kg
Fluoranthene	**100**		D1	73	U	D1	ug/Kg
Pyrene	**110**		D1	73	U	D1	ug/Kg
Chrysene	**140**		D1	73	U	D1	ug/Kg
Benzo(a)anthracene	**91**		D1	73	U	D1	ug/Kg
Benzo(b)fluoranthene	**180**		D1	73	U	D1	ug/Kg
Benzo(k)fluoranthene	71	U	D1	73	U	D1	ug/Kg
Benzo(a)pyrene	**85**		D1	73	U	D1	ug/Kg
Indeno(1,2,3-cd)pyrene	**100**		D1	73	U	D1	ug/Kg
Dibenzo(a,h)anthracene	71	U	D1	73	U	D1	ug/Kg
Benzo(g,h,i)perylene	**150**		D1	73	U	D1	ug/Kg

Surrogate:	% RECOV	% RECOV	LIMITS
p-Terphenyl	102	54	19-162
Date Prepared	05/20/04	05/20/04	
Date Analyzed	05/27/04 06:39	05/27/04 12:04	

Miscellaneous	METHOD	MPT-250-SB-36-(1)	MPT-250-SB-36-(3)	Units
Percent Solids	WETS/72	**94**	**91**	%
Date Prepared		05/18/04	05/18/04	
Date Analyzed		05/19/04 12:55	05/19/04 12:55	

U = Compound was analyzed for but not detected to the level shown.
D1 = Analyte value determined from a 1:2 dilution.

RESULTS OF ANALYSIS

EPA METHOD FLPRO - PETROL. RESIDUAL ORG.	**MPT-250-SB-36-(1)**	**MPT-250-SB-36-(3)**	**Units**
Hydrocarbons (C8-C40)	**46**	**100**	mg/Kg
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
o-Terphenyl	86	114	51-148
Nonatriacontane	94	121	36-152
Date Prepared	05/20/04	05/20/04	
Date Analyzed	05/24/04 16:25	05/24/04 17:07	

RESULTS OF ANALYSIS

Miscellaneous	METHOD	MPT-250-SB-37-(1)	MPT-250-SB-37-(3)	Units
Percent Solids	WETS/72	**97**	**91**	%
Date Prepared		05/18/04	05/18/04	
Date Analyzed		05/19/04 12:55	05/19/04 12:55	

RESULTS OF ANALYSIS

Miscellaneous	METHOD	MPT-250-SB-38-(1)	MPT-250-SB-38-(2.5)	Units
Percent Solids	WETS/72	**94**	**94**	%
Date Prepared		05/18/04	05/18/04	
Date Analyzed		05/19/04 12:55	05/19/04 12:55	

ENCO LABORATORIES
REPORT # : JAX39731
DATE REPORTED: May 27, 2004
REFERENCE : 5863
PROJECT NAME : SITE 250

RESULTS OF ANALYSIS

EPA METHOD 8270 - PAH Compounds by SIM	LAB BLANK	LAB BLANK	Units
Naphthalene	33 U	33 U	ug/Kg
2-Methylnaphthalene	33 U	33 U	ug/Kg
1-Methylnaphthalene	33 U	33 U	ug/Kg
Acenaphthylene	33 U	33 U	ug/Kg
Acenaphthene	33 U	33 U	ug/Kg
Fluorene	33 U	33 U	ug/Kg
Phenanthrene	33 U	33 U	ug/Kg
Anthracene	33 U	33 U	ug/Kg
Fluoranthene	33 U	33 U	ug/Kg
Pyrene	33 U	33 U	ug/Kg
Chrysene	33 U	33 U	ug/Kg
Benzo(a)anthracene	33 U	33 U	ug/Kg
Benzo(b)fluoranthene	33 U	33 U	ug/Kg
Benzo(k)fluoranthene	33 U	33 U	ug/Kg
Benzo(a)pyrene	33 U	33 U	ug/Kg
Indeno(1,2,3-cd)pyrene	33 U	33 U	ug/Kg
Dibenzo(a,h)anthracene	33 U	33 U	ug/Kg
Benzo(g,h,i)perylene	33 U	33 U	ug/Kg
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
p-Terphenyl	83	50	19-162
Date Prepared	05/13/04	05/20/04	
Date Analyzed	05/17/04 15:31	05/27/04 03:55	

U = Compound was analyzed for but not detected to the level shown.

LABORATORY CERTIFICATIONS

Laboratory Certification: NELAC:E82277

All analyses reported with this project were analyzed by the facility indicated unless identified below.

QUALITY CONTROL DATA

Parameter	% RECOVERY LCS/MS/MSD	LCS LIMITS	MS/MSD LIMITS	RPD MS/MSD	RPD LIMITS
EPA Method 8270					
Naphthalene	86/ 80/ 76	48-88	20-131	5	29
Acenaphthene	86/ 80/ 76	57-96	24-132	5	23
Benzo(a)pyrene	92/ 77/ 74	37-134	34-140	4	28
Benzo(g,h,i)perylene	62/ 90/ 88	11-145	31-152	2	21
EPA Method 8270					
Naphthalene	90/ 87/ 84	48-88	20-131	4	29
Acenaphthene	86/ 80/ 80	57-96	24-132	<1	23
Benzo(a)pyrene	72/ 83/ 91	37-134	34-140	9	28
Benzo(g,h,i)perylene	54/ 72/112	11-145	31-152	# 43	21
PETROL. RESIDUAL ORG.					
Hydrocarbons (C8-C40)	86/ 96/ 99	50-116	62-204	3	25
Hydrocarbons (C8-C40)	76/ * / *	50-116	62-204	*	25

< = Less Than
MS = Matrix Spike
MSD = Matrix Spike Duplicate
LCS = Laboratory Control Standard
RPD = Relative Percent Difference
# = One or more of the associated values failed to meet laboratory established limits for precision.
* = MS/MSD/RPD unavailable due to original sample concentration.

APPENDIX K

FIXED-BASE LABORATORY GROUNDWATER ANALYTICAL RESULTS

CLIENT : Tetra Tech NUS	**REPORT #** : JAX34501
ADDRESS: 8640 Philips Highway	**DATE SUBMITTED**: September 24, 2003
Suite 16	**DATE REPORTED** : October 1, 2003
Jacksonville, FL 32256	
	PAGE 1 OF 18

ATTENTION: Mr. D. Siefkend

SAMPLE IDENTIFICATION

Samples submitted and
identified by client as:

REFERENCE: 5863 SITE 250

09/23/03

JAX34501-1	: MW-1	@ 12:55
JAX34501-2	: MW-2	@ 12:35
JAX34501-3	: MW-4	@ 15:25
JAX34501-4	: MW-5	@ 13:40
JAX34501-5	: MW-6D	@ 14:05

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. This data has been produced in accordance with NELAC Standards (July, 1999). This report shall not be reproduced except in full, without the written approval of the laboratory. Results for these procedures apply only to the samples as submitted.

PROJECT MANAGER ______________________________
Christopher K. Devore

RESULTS OF ANALYSIS

EPA METHOD 8260 - VOLATILE ORGANICS	MW-1	MW-2	Units
Dichlorodifluoromethane	2.0 U	2.0 U	ug/L
Chloromethane	1.0 U	1.0 U	ug/L
Vinyl Chloride	1.0 U	1.0 U	ug/L
Bromomethane	2.0 U	2.0 U	ug/L
Chloroethane	2.0 U	2.0 U	ug/L
Trichlorofluoromethane	1.0 U	1.0 U	ug/L
1,1-Dichloroethene	1.0 U	1.0 U	ug/L
Acetone	50 U	50 U	ug/L
Carbon Disulfide	50 U	50 U	ug/L
Methylene Chloride	5.0 U	5.0 U	ug/L
t-1,2-Dichloroethene	1.0 U	1.0 U	ug/L
Methyl tert-butyl ether	1.0 U	1.0 U	ug/L
1,1-Dichloroethane	1.0 U	1.0 U	ug/L
2,2-Dichloropropane	2.0 U	2.0 U	ug/L
c-1,2-Dichloroethene	1.0 U	1.0 U	ug/L
2-Butanone	20 U	20 U	ug/L
Chloroform	1.0 U	1.0 U	ug/L
1,1,1-Trichloroethane	1.0 U	1.0 U	ug/L
Carbon tetrachloride	1.0 U	1.0 U	ug/L
1,1-Dichloropropene	1.0 U	1.0 U	ug/L
Benzene	1.0 U	1.0 U	ug/L
1,2-Dichloroethane	1.0 U	1.0 U	ug/L
Trichloroethene	1.0 U	1.0 U	ug/L
1,2-Dichloropropane	1.0 U	1.0 U	ug/L
Dibromomethane	1.0 U	1.0 U	ug/L
Bromodichloromethane	1.0 U	1.0 U	ug/L

U = Compound was analyzed for but not detected to the level shown.

RESULTS OF ANALYSIS

EPA METHOD 8260 (cont.) - VOLATILE ORGANICS	MW-1	MW-2	Units
2-Chloroethyl vinyl ether	6.0 U	6.0 U	ug/L
c-1,3-Dichloropropene	1.0 U	1.0 U	ug/L
4-Methyl-2-pentanone	20 U	20 U	ug/L
Toluene	1.0 U	1.0 U	ug/L
t-1,3-Dichloropropene	1.0 U	1.0 U	ug/L
1,1,2-Trichloroethane	1.0 U	1.0 U	ug/L
Tetrachloroethene	3.0 U	3.0 U	ug/L
1,3-Dichloropropane	1.0 U	1.0 U	ug/L
2-Hexanone	20 U	20 U	ug/L
Dibromochloromethane	1.0 U	1.0 U	ug/L
1,2-Dibromoethane	1.0 U	1.0 U	ug/L
Chlorobenzene	1.0 U	1.0 U	ug/L
1,1,1,2-Tetrachloroethane	1.0 U	1.0 U	ug/L
Ethylbenzene	1.0 U	1.0 U	ug/L
m-Xylene & p-Xylene	2.0 U	2.0 U	ug/L
o-Xylene	1.0 U	1.0 U	ug/L
Styrene	1.0 U	1.0 U	ug/L
Bromoform	1.0 U	1.0 U	ug/L
Isopropylbenzene	1.0 U	1.0 U	ug/L
1,1,2,2-Tetrachloroethane	1.0 U	1.0 U	ug/L
Bromobenzene	1.0 U	1.0 U	ug/L
1,2,3-Trichlorobenzene	1.0 U	1.0 U	ug/L
n-Propylbenzene	1.0 U	1.0 U	ug/L
2-Chlorotoluene	1.0 U	1.0 U	ug/L
1,3,5-Trimethylbenzene	1.0 U	1.0 U	ug/L
4-Chlorotoluene	1.0 U	1.0 U	ug/L

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JAX34501
DATE REPORTED: October 1, 2003
REFERENCE : 5863 SITE 250

RESULTS OF ANALYSIS

EPA METHOD 8260 (cont.) -

VOLATILE ORGANICS	**MW-1**	**MW-2**	**Units**
tert-Butylbenzene	1.0 U	1.0 U	ug/L
1,2,4-Trimethylbenzene	1.0 U	1.0 U	ug/L
s-Butylbenzene	1.0 U	1.0 U	ug/L
1,3-Dichlorobenzene	1.0 U	1.0 U	ug/L
p-Isopropyltoluene	1.0 U	1.0 U	ug/L
1,4-Dichlorobenzene	1.0 U	1.0 U	ug/L
n-Butylbenzene	1.0 U	1.0 U	ug/L
1,2-Dichlorobenzene	1.0 U	1.0 U	ug/L
1,2-Dibromo-3-chloropropane	1.0 U	1.0 U	ug/L
1,2,4-Trichlorobenzene	1.0 U	1.0 U	ug/L
Hexachlorobutadiene	1.0 U	1.0 U	ug/L
Naphthalene	2.0 U	2.0 U	ug/L
1,2,3-Trichloropropane	1.0 U	1.0 U	ug/L
Bromochloromethane	1.0 U	1.0 U	ug/L

Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
Dibromofluoromethane	123	126	67-139
D8-Toluene	96	99	80-115
Bromofluorobenzene	76	71	66-131
Date Analyzed	10/01/03 07:00	10/01/03 07:36	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JAX34501
DATE REPORTED: October 1, 2003
REFERENCE : 5863 SITE 250

RESULTS OF ANALYSIS

EPA METHOD 8270 - **PAH Compounds by SIM**	**MW-1**	**MW-2**	**Units**
Naphthalene	**0.23**	0.10 U	ug/L
2-Methylnaphthalene	**1.1**	0.10 U	ug/L
1-Methylnaphthalene	**1.3**	0.10 U	ug/L
Acenaphthylene	0.10 U	0.10 U	ug/L
Acenaphthene	0.10 U	0.10 U	ug/L
Fluorene	0.10 U	0.10 U	ug/L
Phenanthrene	0.10 U	0.10 U	ug/L
Anthracene	0.10 U	0.10 U	ug/L
Fluoranthene	0.10 U	0.10 U	ug/L
Pyrene	0.10 U	0.10 U	ug/L
Chrysene	0.10 U	0.10 U	ug/L
Benzo(a)anthracene	0.10 U	0.10 U	ug/L
Benzo(b)fluoranthene	0.10 U	0.10 U	ug/L
Benzo(k)fluoranthene	0.10 U	0.10 U	ug/L
Benzo(a)pyrene	0.10 U	0.10 U	ug/L
Indeno(1,2,3-cd)pyrene	0.10 U	0.10 U	ug/L
Dibenzo(a,h)anthracene	0.10 U	0.10 U	ug/L
Benzo(g,h,i)perylene	0.10 U	0.10 U	ug/L
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
p-Terphenyl	56	65	20-148
Date Prepared	09/25/03	09/25/03	
Date Analyzed	09/25/03 21:01	09/25/03 21:25	

EPA METHOD 504 - **ETHYLENE DIBROMIDE**	**MW-1**	**MW-2**	**Units**
Ethylene Dibromide	0.020 U	0.020 U	ug/L
Date Prepared	09/25/03	09/25/03	
Date Analyzed	09/29/03 12:43	09/29/03 13:01	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JAX34501
DATE REPORTED: October 1, 2003
REFERENCE : 5863 SITE 250

RESULTS OF ANALYSIS

TOTAL METALS	METHOD	MW-1	MW-2	Units
Lead	200.7	0.010 U	0.010 U	mg/L
Date Analyzed		09/30/03 03:11	09/30/03 03:19	

EPA METHOD FLPRO - PETROL. RESIDUAL ORG.	MW-1	MW-2	Units
Hydrocarbons (C8-C40)	**0.50**	**0.22**	mg/L
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
o-Terphenyl	89	86	38-133
Nonatriacontane	75	72	20-127
Date Prepared	09/26/03	09/26/03	
Date Analyzed	09/29/03 19:46	09/29/03 19:58	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JAX34501
DATE REPORTED: October 1, 2003
REFERENCE : 5863 SITE 250

RESULTS OF ANALYSIS

EPA METHOD 8260 - VOLATILE ORGANICS	MW-4	MW-5	Units
Dichlorodifluoromethane	2.0 U	2.0 U	ug/L
Chloromethane	1.0 U	1.0 U	ug/L
Vinyl Chloride	1.0 U	1.0 U	ug/L
Bromomethane	2.0 U	2.0 U	ug/L
Chloroethane	2.0 U	2.0 U	ug/L
Trichlorofluoromethane	1.0 U	1.0 U	ug/L
1,1-Dichloroethene	1.0 U	1.0 U	ug/L
Acetone	50 U	50 U	ug/L
Carbon Disulfide	50 U	50 U	ug/L
Methylene Chloride	5.0 U	5.0 U	ug/L
t-1,2-Dichloroethene	1.0 U	1.0 U	ug/L
Methyl tert-butyl ether	1.0 U	1.0 U	ug/L
1,1-Dichloroethane	1.0 U	1.0 U	ug/L
2,2-Dichloropropane	2.0 U	2.0 U	ug/L
c-1,2-Dichloroethene	1.0 U	1.0 U	ug/L
2-Butanone	20 U	20 U	ug/L
Chloroform	1.0 U	1.0 U	ug/L
1,1,1-Trichloroethane	1.0 U	1.0 U	ug/L
Carbon tetrachloride	1.0 U	1.0 U	ug/L
1,1-Dichloropropene	1.0 U	1.0 U	ug/L
Benzene	1.0 U	1.0 U	ug/L
1,2-Dichloroethane	1.0 U	1.0 U	ug/L
Trichloroethene	1.0 U	1.0 U	ug/L
1,2-Dichloropropane	1.0 U	1.0 U	ug/L
Dibromomethane	1.0 U	1.0 U	ug/L
Bromodichloromethane	1.0 U	1.0 U	ug/L

U = Compound was analyzed for but not detected to the level shown.

RESULTS OF ANALYSIS

EPA METHOD 8260 (cont.) - VOLATILE ORGANICS	**MW-4**	**MW-5**	**Units**
2-Chloroethyl vinyl ether	6.0 U	6.0 U	ug/L
c-1,3-Dichloropropene	1.0 U	1.0 U	ug/L
4-Methyl-2-pentanone	20 U	20 U	ug/L
Toluene	1.0 U	1.0 U	ug/L
t-1,3-Dichloropropene	1.0 U	1.0 U	ug/L
1,1,2-Trichloroethane	1.0 U	1.0 U	ug/L
Tetrachloroethene	3.0 U	3.0 U	ug/L
1,3-Dichloropropane	1.0 U	1.0 U	ug/L
2-Hexanone	20 U	20 U	ug/L
Dibromochloromethane	1.0 U	1.0 U	ug/L
1,2-Dibromoethane	1.0 U	1.0 U	ug/L
Chlorobenzene	1.0 U	1.0 U	ug/L
1,1,1,2-Tetrachloroethane	1.0 U	1.0 U	ug/L
Ethylbenzene	1.0 U	1.0 U	ug/L
m-Xylene & p-Xylene	2.0 U	2.0 U	ug/L
o-Xylene	1.0 U	1.0 U	ug/L
Styrene	1.0 U	1.0 U	ug/L
Bromoform	1.0 U	1.0 U	ug/L
Isopropylbenzene	1.0 U	1.0 U	ug/L
1,1,2,2-Tetrachloroethane	1.0 U	1.0 U	ug/L
Bromobenzene	1.0 U	1.0 U	ug/L
1,2,3-Trichlorobenzene	1.0 U	1.0 U	ug/L
n-Propylbenzene	1.0 U	1.0 U	ug/L
2-Chlorotoluene	1.0 U	1.0 U	ug/L
1,3,5-Trimethylbenzene	1.0 U	1.0 U	ug/L
4-Chlorotoluene	1.0 U	1.0 U	ug/L

U = Compound was analyzed for but not detected to the level shown.

RESULTS OF ANALYSIS

EPA METHOD 8260 (cont.) -

VOLATILE ORGANICS	MW-4	MW-5	Units
tert-Butylbenzene	1.0 U	1.0 U	ug/L
1,2,4-Trimethylbenzene	1.0 U	1.0 U	ug/L
s-Butylbenzene	1.0 U	1.0 U	ug/L
1,3-Dichlorobenzene	1.0 U	1.0 U	ug/L
p-Isopropyltoluene	1.0 U	1.0 U	ug/L
1,4-Dichlorobenzene	1.0 U	1.0 U	ug/L
n-Butylbenzene	1.0 U	1.0 U	ug/L
1,2-Dichlorobenzene	1.0 U	1.0 U	ug/L
1,2-Dibromo-3-chloropropane	1.0 U	1.0 U	ug/L
1,2,4-Trichlorobenzene	1.0 U	1.0 U	ug/L
Hexachlorobutadiene	1.0 U	1.0 U	ug/L
Naphthalene	2.0 U	2.0 U	ug/L
1,2,3-Trichloropropane	1.0 U	1.0 U	ug/L
Bromochloromethane	1.0 U	1.0 U	ug/L

Surrogate:	% RECOV	% RECOV	LIMITS
Dibromofluoromethane	120	121	67-139
D8-Toluene	95	93	80-115
Bromofluorobenzene	69	69	66-131
Date Analyzed	10/01/03 08:11	10/01/03 08:47	

U = Compound was analyzed for but not detected to the level shown.

RESULTS OF ANALYSIS

EPA METHOD 8270 - PAH Compounds by SIM	MW-4	MW-5	Units
Naphthalene	0.10 U	0.10 U	ug/L
2-Methylnaphthalene	0.10 U	0.10 U	ug/L
1-Methylnaphthalene	0.10 U	0.10 U	ug/L
Acenaphthylene	0.10 U	0.10 U	ug/L
Acenaphthene	0.10 U	0.10 U	ug/L
Fluorene	0.10 U	0.10 U	ug/L
Phenanthrene	0.10 U	0.10 U	ug/L
Anthracene	0.10 U	0.10 U	ug/L
Fluoranthene	0.10 U	0.10 U	ug/L
Pyrene	0.10 U	0.10 U	ug/L
Chrysene	0.10 U	0.10 U	ug/L
Benzo(a)anthracene	0.10 U	0.10 U	ug/L
Benzo(b)fluoranthene	0.10 U	0.10 U	ug/L
Benzo(k)fluoranthene	0.10 U	0.10 U	ug/L
Benzo(a)pyrene	0.10 U	0.10 U	ug/L
Indeno(1,2,3-cd)pyrene	0.10 U	0.10 U	ug/L
Dibenzo(a,h)anthracene	0.10 U	0.10 U	ug/L
Benzo(g,h,i)perylene	0.10 U	0.10 U	ug/L
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
p-Terphenyl	64	71	20-148
Date Prepared	09/25/03	09/25/03	
Date Analyzed	09/25/03 21:48	09/25/03 22:12	

EPA METHOD 504 - ETHYLENE DIBROMIDE	MW-4	MW-5	Units
Ethylene Dibromide	0.020 U	0.020 U	ug/L
Date Prepared	09/25/03	09/25/03	
Date Analyzed	09/29/03 13:19	09/29/03 13:37	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JAX34501
DATE REPORTED: October 1, 2003
REFERENCE : 5863 SITE 250

RESULTS OF ANALYSIS

TOTAL METALS	METHOD	MW-4	MW-5	Units
Lead	200.7	0.010 U	0.010 U	mg/L
Date Analyzed		09/30/03 03:26	09/30/03 03:33	

EPA METHOD FLPRO - PETROL. RESIDUAL ORG.	MW-4	MW-5	Units
Hydrocarbons (C8-C40)	0.20 U	0.20 U	mg/L
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
o-Terphenyl	76	92	38-133
Nonatriacontane	62	77	20-127
Date Prepared	09/26/03	09/26/03	
Date Analyzed	09/29/03 20:10	09/29/03 20:22	

U = Compound was analyzed for but not detected to the level shown.

RESULTS OF ANALYSIS

EPA METHOD 8260 - VOLATILE ORGANICS	**MW-6D**	**LAB BLANK**	**Units**
Dichlorodifluoromethane	2.0 U	2.0 U	ug/L
Chloromethane	1.0 U	1.0 U	ug/L
Vinyl Chloride	1.0 U	1.0 U	ug/L
Bromomethane	2.0 U	2.0 U	ug/L
Chloroethane	2.0 U	2.0 U	ug/L
Trichlorofluoromethane	1.0 U	1.0 U	ug/L
1,1-Dichloroethene	1.0 U	1.0 U	ug/L
Acetone	50 U	50 U	ug/L
Carbon Disulfide	50 U	50 U	ug/L
Methylene Chloride	5.0 U	5.0 U	ug/L
t-1,2-Dichloroethene	1.0 U	1.0 U	ug/L
Methyl tert-butyl ether	**2.4**	1.0 U	ug/L
1,1-Dichloroethane	**2.0**	1.0 U	ug/L
2,2-Dichloropropane	2.0 U	2.0 U	ug/L
c-1,2-Dichloroethene	**1.3**	1.0 U	ug/L
2-Butanone	20 U	20 U	ug/L
Chloroform	1.0 U	1.0 U	ug/L
1,1,1-Trichloroethane	1.0 U	1.0 U	ug/L
Carbon tetrachloride	1.0 U	1.0 U	ug/L
1,1-Dichloropropene	1.0 U	1.0 U	ug/L
Benzene	1.0 U	1.0 U	ug/L
1,2-Dichloroethane	1.0 U	1.0 U	ug/L
Trichloroethene	1.0 U	1.0 U	ug/L
1,2-Dichloropropane	1.0 U	1.0 U	ug/L
Dibromomethane	1.0 U	1.0 U	ug/L
Bromodichloromethane	1.0 U	1.0 U	ug/L

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JAX34501
DATE REPORTED: October 1, 2003
REFERENCE : 5863 SITE 250

RESULTS OF ANALYSIS

EPA METHOD 8260 (cont.) - VOLATILE ORGANICS	MW-6D	LAB BLANK	Units
2-Chloroethyl vinyl ether	6.0 U	6.0 U	ug/L
c-1,3-Dichloropropene	1.0 U	1.0 U	ug/L
4-Methyl-2-pentanone	20 U	20 U	ug/L
Toluene	1.0 U	1.0 U	ug/L
t-1,3-Dichloropropene	1.0 U	1.0 U	ug/L
1,1,2-Trichloroethane	1.0 U	1.0 U	ug/L
Tetrachloroethene	3.0 U	3.0 U	ug/L
1,3-Dichloropropane	1.0 U	1.0 U	ug/L
2-Hexanone	20 U	20 U	ug/L
Dibromochloromethane	1.0 U	1.0 U	ug/L
1,2-Dibromoethane	1.0 U	1.0 U	ug/L
Chlorobenzene	1.0 U	1.0 U	ug/L
1,1,1,2-Tetrachloroethane	1.0 U	1.0 U	ug/L
Ethylbenzene	1.0 U	1.0 U	ug/L
m-Xylene & p-Xylene	2.0 U	2.0 U	ug/L
o-Xylene	1.0 U	1.0 U	ug/L
Styrene	1.0 U	1.0 U	ug/L
Bromoform	1.0 U	1.0 U	ug/L
Isopropylbenzene	1.0 U	1.0 U	ug/L
1,1,2,2-Tetrachloroethane	1.0 U	1.0 U	ug/L
Bromobenzene	1.0 U	1.0 U	ug/L
1,2,3-Trichlorobenzene	1.0 U	1.0 U	ug/L
n-Propylbenzene	1.0 U	1.0 U	ug/L
2-Chlorotoluene	1.0 U	1.0 U	ug/L
1,3,5-Trimethylbenzene	1.0 U	1.0 U	ug/L
4-Chlorotoluene	1.0 U	1.0 U	ug/L

U = Compound was analyzed for but not detected to the level shown.

RESULTS OF ANALYSIS

EPA METHOD 8260 (cont.) - VOLATILE ORGANICS	**MW-6D**	**LAB BLANK**	**Units**
tert-Butylbenzene	1.0 U	1.0 U	ug/L
1,2,4-Trimethylbenzene	1.0 U	1.0 U	ug/L
s-Butylbenzene	1.0 U	1.0 U	ug/L
1,3-Dichlorobenzene	1.0 U	1.0 U	ug/L
p-Isopropyltoluene	1.0 U	1.0 U	ug/L
1,4-Dichlorobenzene	1.0 U	1.0 U	ug/L
n-Butylbenzene	1.0 U	1.0 U	ug/L
1,2-Dichlorobenzene	1.0 U	1.0 U	ug/L
1,2-Dibromo-3-chloropropane	1.0 U	1.0 U	ug/L
1,2,4-Trichlorobenzene	1.0 U	1.0 U	ug/L
Hexachlorobutadiene	1.0 U	1.0 U	ug/L
Naphthalene	2.0 U	2.0 U	ug/L
1,2,3-Trichloropropane	1.0 U	1.0 U	ug/L
Bromochloromethane	1.0 U	1.0 U	ug/L

Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
Dibromofluoromethane	130	98	67-139
D8-Toluene	100	85	80-115
Bromofluorobenzene	76	68	66-131
Date Analyzed	10/01/03 09:22	10/01/03 03:26	

U = Compound was analyzed for but not detected to the level shown.

RESULTS OF ANALYSIS

EPA METHOD 8270 -

PAH Compounds by SIM	MW-6D	LAB BLANK	Units
Naphthalene	0.10 U	0.10 U	ug/L
2-Methylnaphthalene	0.10 U	0.10 U	ug/L
1-Methylnaphthalene	0.10 U	0.10 U	ug/L
Acenaphthylene	0.10 U	0.10 U	ug/L
Acenaphthene	0.10 U	0.10 U	ug/L
Fluorene	0.10 U	0.10 U	ug/L
Phenanthrene	0.10 U	0.10 U	ug/L
Anthracene	0.10 U	0.10 U	ug/L
Fluoranthene	0.10 U	0.10 U	ug/L
Pyrene	0.10 U	0.10 U	ug/L
Chrysene	0.10 U	0.10 U	ug/L
Benzo(a)anthracene	0.10 U	0.10 U	ug/L
Benzo(b)fluoranthene	0.10 U	0.10 U	ug/L
Benzo(k)fluoranthene	0.10 U	0.10 U	ug/L
Benzo(a)pyrene	0.10 U	0.10 U	ug/L
Indeno(1,2,3-cd)pyrene	0.10 U	0.10 U	ug/L
Dibenzo(a,h)anthracene	0.10 U	0.10 U	ug/L
Benzo(g,h,i)perylene	0.10 U	0.10 U	ug/L
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
p-Terphenyl	57	70	20-148
Date Prepared	09/25/03	09/25/03	
Date Analyzed	09/25/03 22:36	09/25/03 18:15	

EPA METHOD 504 -

ETHYLENE DIBROMIDE	MW-6D	LAB BLANK	Units
Ethylene Dibromide	0.020 U	0.020 U	ug/L
Date Prepared	09/25/03	09/25/03	
Date Analyzed	09/29/03 13:55	09/29/03 12:06	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JAX34501
DATE REPORTED: October 1, 2003
REFERENCE : 5863 SITE 250

RESULTS OF ANALYSIS

TOTAL METALS	METHOD	MW-6D	LAB BLANK	Units
Lead	200.7	0.010 U	0.010 U	mg/L
Date Analyzed		09/30/03 03:41	09/30/03 00:26	

EPA METHOD FLPRO - PETROL. RESIDUAL ORG.	MW-6D	LAB BLANK	Units
Hydrocarbons (C8-C40)	0.20 U	0.20 U	mg/L
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
o-Terphenyl	90	77	38-133
Nonatriacontane	73	44	20-127
Date Prepared	09/26/03	09/26/03	
Date Analyzed	09/29/03 20:34	09/29/03 16:59	

U = Compound was analyzed for but not detected to the level shown.

LABORATORY CERTIFICATIONS

Laboratory Certification: NELAC:E82277

All analyses reported with this project were analyzed by the facility indicated unless identified below.

QUALITY CONTROL DATA

Parameter	% RECOVERY MS/MSD/LCS	ACCEPT LIMITS	% RPD MS/MSD	ACCEPT LIMITS
EPA Method 8260				
1,1-Dichloroethene	100/ 93/105	40-155	7	30
Benzene	105/106/ 97	70-131	<1	23
Trichloroethene	92/ 93/ 86	68-128	1	10
Toluene	101/106/100	84-116	5	12
Chlorobenzene	105/112/102	88-123	6	11
EPA Method 8270				
Naphthalene	55/ 62/ 53	30-112	12	28
Acenaphthene	60/ 68/ 66	28-113	12	32
Benzo(a)pyrene	81/ 84/ 78	39-148	4	38
Benzo(g,h,i)perylene	71/ 80/ 64	20-130	12	43
EPA Method 504				
Ethylene Dibromide	95/ 94/ 81	57-130	1	18
Dibromochloropropane	96/100/ 82	60-130	4	20
TOTAL METALS				
Lead, 200.7	103/101/104	68-126	2	19
PETROL. RESIDUAL ORG.				
Hydrocarbons (C8-C40)	82/ 85/ 82	51-163	4	27

< = Less Than
MS = Matrix Spike
MSD = Matrix Spike Duplicate
LCS = Laboratory Control Standard
RPD = Relative Percent Difference

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Tetra Tech NUS, Inc
Project: CTO303 NAS MAYPORT
PO No:
Sample Date: 11/24/03
Received Date: 11/26/03
Extraction Date: 12/01/03
Analysis Date: 12/12/03
Report Date: 12/18/2003
Matrix: WATER
% Solids: NA

Lab ID: WT3025-4RA
Client ID: MPT-250-MW1
SDG: WT3025
Extracted by: LS
Extraction Method: SW846 3510
Analyst: JCG
Analysis Method: SW846 M8270C
Lab Prep Batch: WG4862
Units: ug/L

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
91-20-3	Naphthalene	J	0.13	1.0	0.20	0.20	0.047
91-57-6	2-Methylnaphthalene		0.84	1.0	0.20	0.20	0.075
208-96-8	Acenaphthylene	U	0.20	1.0	0.20	0.20	0.047
83-32-9	Acenaphthene	U	0.20	1.0	0.20	0.20	0.075
86-73-7	Fluorene	U	0.20	1.0	0.20	0.20	0.057
85-01-8	Phenanthrene	U	0.20	1.0	0.20	0.20	0.075
120-12-7	Anthracene	U	0.20	1.0	0.20	0.20	0.075
206-44-0	Fluoranthene	U	0.20	1.0	0.20	0.20	0.10
129-00-0	Pyrene	U	0.20	1.0	0.20	0.20	0.085
56-55-3	Benzo(a)anthracene	U	0.20	1.0	0.20	0.20	0.11
218-01-9	Chrysene	U	0.20	1.0	0.20	0.20	0.066
205-99-2	Benzo(b)fluoranthene	U	0.20	1.0	0.20	0.20	0.085
207-08-9	Benzo(k)fluoranthene	U	0.20	1.0	0.20	0.20	0.075
50-32-8	Benzo(a)pyrene	U	0.20	1.0	0.20	0.20	0.085
193-39-5	Indeno(1,2,3-cd)pyrene	U	0.20	1.0	0.20	0.20	0.094
53-70-3	Dibenzo(a,h)anthracene	U	0.20	1.0	0.20	0.20	0.14
191-24-2	Benzo(g,h,i)perylene	U	0.20	1.0	0.20	0.20	0.075
90-12-0	1-Methylnaphthalene		0.90	1.0	0.20	0.20	0.075
7297-45-2	2-Methylnaphthalene-d10		60%				
81103-79-9	Fluorene-d10		71%				
1718-52-1	Pyrene-d10		96%				

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Tetra Tech NUS, Inc
Project: CTO303 NAS MAYPORT
PO No:
Sample Date: 11/24/03
Received Date: 11/26/03
Extraction Date: 12/01/03
Analysis Date: 12/04/03
Report Date: 12/16/2003
Matrix: WATER
% Solids: NA

Lab ID: WT3025-4
Client ID: MPT-250-MW1
SDG: WT3025
Extracted by: LS
Extraction Method: SW846 3510
Analyst: SAW
Analysis Method: SW846 M8100
Lab Prep Batch: WG4863
Units: ug/L

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
	Petroleum Range Organics	J	310	1.0	500	500	270
	n-Triacontane-D62		99%				
	O-Terphenyl		86%				

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Tetra Tech NUS, Inc
Project: CTO303 NAS MAYPORT
PO No:
Sample Date: 11/24/03
Received Date: 11/26/03
Extraction Date: 12/01/03
Analysis Date: 12/12/03
Report Date: 12/18/2003
Matrix: WATER
% Solids: NA

Lab ID: WT3025-7RA
Client ID: MPT-250-MW2
SDG: WT3025
Extracted by: LS
Extraction Method: SW846 3510
Analyst: JCG
Analysis Method: SW846 M8270C
Lab Prep Batch: WG4862
Units: ug/L

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
91-20-3	Naphthalene	U	0.20	1.0	0.20	0.20	0.048
91-57-6	2-Methylnaphthalene	U	0.20	1.0	0.20	0.20	0.078
208-96-8	Acenaphthylene	U	0.20	1.0	0.20	0.20	0.048
83-32-9	Acenaphthene	U	0.20	1.0	0.20	0.20	0.078
86-73-7	Fluorene	U	0.20	1.0	0.20	0.20	0.058
85-01-8	Phenanthrene	U	0.20	1.0	0.20	0.20	0.078
120-12-7	Anthracene	U	0.20	1.0	0.20	0.20	0.078
206-44-0	Fluoranthene	U	0.20	1.0	0.20	0.20	0.11
129-00-0	Pyrene	U	0.20	1.0	0.20	0.20	0.087
56-55-3	Benzo(a)anthracene	U	0.20	1.0	0.20	0.20	0.12
218-01-9	Chrysene	U	0.20	1.0	0.20	0.20	0.068
205-99-2	Benzo(b)fluoranthene	U	0.20	1.0	0.20	0.20	0.087
207-08-9	Benzo(k)fluoranthene	U	0.20	1.0	0.20	0.20	0.078
50-32-8	Benzo(a)pyrene	U	0.20	1.0	0.20	0.20	0.087
193-39-5	Indeno(1,2,3-cd)pyrene	U	0.20	1.0	0.20	0.20	0.097
53-70-3	Dibenzo(a,h)anthracene	U	0.20	1.0	0.20	0.20	0.14
191-24-2	Benzo(g,h,i)perylene	U	0.20	1.0	0.20	0.20	0.078
90-12-0	1-Methylnaphthalene	U	0.20	1.0	0.20	0.20	0.078
7297-45-2	2-Methylnaphthalene-d10		56%				
81103-79-9	Fluorene-d10		66%				
1718-52-1	Pyrene-d10		113%				

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Tetra Tech NUS, Inc
Project: CTO303 NAS MAYPORT
PO No:
Sample Date: 11/24/03
Received Date: 11/26/03
Extraction Date: 12/01/03
Analysis Date: 12/04/03
Report Date: 12/16/2003
Matrix: WATER
% Solids: NA

Lab ID: WT3025-7
Client ID: MPT-250-MW2
SDG: WT3025
Extracted by: LS
Extraction Method: SW846 3510
Analyst: SAW
Analysis Method: SW846 M8100
Lab Prep Batch: WG4863
Units: ug/L

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
	Petroleum Range Organics	J	380	1.0	500	500	270
	n-Triacontane-D62		168%				
	O-Terphenyl		136%				

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Tetra Tech NUS, Inc
Project: CTO303 NAS MAYPORT
PO No:
Sample Date: 11/24/03
Received Date: 11/26/03
Extraction Date: 12/01/03
Analysis Date: 12/12/03
Report Date: 12/18/2003
Matrix: WATER
% Solids: NA

Lab ID: WT3025-3RA
Client ID: MPT-250-MW4
SDG: WT3025
Extracted by: LS
Extraction Method: SW846 3510
Analyst: JCG
Analysis Method: SW846 M8270C
Lab Prep Batch: WG4862
Units: ug/L

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
91-20-3	Naphthalene	U	0.20	1.0	0.20	0.20	0.047
91-57-6	2-Methylnaphthalene	U	0.20	1.0	0.20	0.20	0.075
208-96-8	Acenaphthylene	U	0.20	1.0	0.20	0.20	0.047
83-32-9	Acenaphthene	U	0.20	1.0	0.20	0.20	0.075
86-73-7	Fluorene	U	0.20	1.0	0.20	0.20	0.057
85-01-8	Phenanthrene	U	0.20	1.0	0.20	0.20	0.075
120-12-7	Anthracene	U	0.20	1.0	0.20	0.20	0.075
206-44-0	Fluoranthene	U	0.20	1.0	0.20	0.20	0.10
129-00-0	Pyrene	U	0.20	1.0	0.20	0.20	0.085
56-55-3	Benzo(a)anthracene	U	0.20	1.0	0.20	0.20	0.11
218-01-9	Chrysene	U	0.20	1.0	0.20	0.20	0.066
205-99-2	Benzo(b)fluoranthene	U	0.20	1.0	0.20	0.20	0.085
207-08-9	Benzo(k)fluoranthene	U	0.20	1.0	0.20	0.20	0.075
50-32-8	Benzo(a)pyrene	U	0.20	1.0	0.20	0.20	0.085
193-39-5	Indeno(1,2,3-cd)pyrene	U	0.20	1.0	0.20	0.20	0.094
53-70-3	Dibenzo(a,h)anthracene	U	0.20	1.0	0.20	0.20	0.14
191-24-2	Benzo(g,h,i)perylene	U	0.20	1.0	0.20	0.20	0.075
90-12-0	1-Methylnaphthalene	U	0.20	1.0	0.20	0.20	0.075
7297-45-2	2-Methylnaphthalene-d10		57%				
81103-79-9	Fluorene-d10		54%				
1718-52-1	Pyrene-d10		111%				

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Tetra Tech NUS, Inc	Lab ID: WT3025-3
Project: CTO303 NAS MAYPORT	Client ID: MPT-250-MW4
PO No:	SDG: WT3025
Sample Date: 11/24/03	Extracted by: LS
Received Date: 11/26/03	Extraction Method: SW846 3510
Extraction Date: 12/01/03	Analyst: SAW
Analysis Date: 12/04/03	Analysis Method: SW846 M8100
Report Date: 12/16/2003	Lab Prep Batch: WG4863
Matrix: WATER	Units: ug/L
% Solids: NA	

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
	Petroleum Range Organics	J	430	1.0	500	500	270
	n-Triacontane-D62		84%				
	O-Terphenyl		* 69%				

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Tetra Tech NUS, Inc
Project: CTO303 NAS MAYPORT
PO No:
Sample Date: 11/24/03
Received Date: 11/26/03
Extraction Date: 12/01/03
Analysis Date: 12/12/03
Report Date: 12/18/2003
Matrix: WATER
% Solids: NA

Lab ID: WT3025-6RA
Client ID: MPT-250-MW5
SDG: WT3025
Extracted by: LS
Extraction Method: SW846 3510
Analyst: JCG
Analysis Method: SW846 M8270C
Lab Prep Batch: WG4862
Units: ug/L

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
91-20-3	Naphthalene	U	0.20	1.0	0.20	0.20	0.048
91-57-6	2-Methylnaphthalene	U	0.20	1.0	0.20	0.20	0.077
208-96-8	Acenaphthylene	U	0.20	1.0	0.20	0.20	0.048
83-32-9	Acenaphthene	U	0.20	1.0	0.20	0.20	0.077
86-73-7	Fluorene	U	0.20	1.0	0.20	0.20	0.058
85-01-8	Phenanthrene	U	0.20	1.0	0.20	0.20	0.077
120-12-7	Anthracene	U	0.20	1.0	0.20	0.20	0.077
206-44-0	Fluoranthene	U	0.20	1.0	0.20	0.20	0.10
129-00-0	Pyrene	U	0.20	1.0	0.20	0.20	0.086
56-55-3	Benzo(a)anthracene	U	0.20	1.0	0.20	0.20	0.12
218-01-9	Chrysene	U	0.20	1.0	0.20	0.20	0.067
205-99-2	Benzo(b)fluoranthene	U	0.20	1.0	0.20	0.20	0.086
207-08-9	Benzo(k)fluoranthene	U	0.20	1.0	0.20	0.20	0.077
50-32-8	Benzo(a)pyrene	U	0.20	1.0	0.20	0.20	0.086
193-39-5	Indeno(1,2,3-cd)pyrene	U	0.20	1.0	0.20	0.20	0.096
53-70-3	Dibenzo(a,h)anthracene	U	0.20	1.0	0.20	0.20	0.14
191-24-2	Benzo(g,h,i)perylene	U	0.20	1.0	0.20	0.20	0.077
90-12-0	1-Methylnaphthalene	U	0.20	1.0	0.20	0.20	0.077
7297-45-2	2-Methylnaphthalene-d10		62%				
81103-79-9	Fluorene-d10		55%				
1718-52-1	Pyrene-d10		131%				

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Tetra Tech NUS, Inc
Project: CTO303 NAS MAYPORT
PO No:
Sample Date: 11/24/03
Received Date: 11/26/03
Extraction Date: 12/01/03
Analysis Date: 12/04/03
Report Date: 12/16/2003
Matrix: WATER
% Solids: NA

Lab ID: WT3025-6
Client ID: MPT-250-MW5
SDG: WT3025
Extracted by: LS
Extraction Method: SW846 3510
Analyst: SAW
Analysis Method: SW846 M8100
Lab Prep Batch: WG4863
Units: ug/L

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
	Petroleum Range Organics	U	500	1.0	500	500	270
	n-Triacontane-D62		97%				
	O-Terphenyl		* 78%				

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Tetra Tech NUS, Inc
Project: CTO303 NAS MAYPORT
PO No:
Sample Date: 11/24/03
Received Date: 11/26/03
Extraction Date: 12/01/03
Analysis Date: 12/12/03
Report Date: 12/18/2003
Matrix: WATER
% Solids: NA

Lab ID: WT3025-5RA
Client ID: MPT-250-MW6D
SDG: WT3025
Extracted by: LS
Extraction Method: SW846 3510
Analyst: JCG
Analysis Method: SW846 M8270C
Lab Prep Batch: WG4862
Units: ug/L

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
91-20-3	Naphthalene	U	0.20	1.0	0.20	0.20	0.048
91-57-6	2-Methylnaphthalene	U	0.20	1.0	0.20	0.20	0.077
208-96-8	Acenaphthylene	U	0.20	1.0	0.20	0.20	0.048
83-32-9	Acenaphthene	U	0.20	1.0	0.20	0.20	0.077
86-73-7	Fluorene	U	0.20	1.0	0.20	0.20	0.058
85-01-8	Phenanthrene	U	0.20	1.0	0.20	0.20	0.077
120-12-7	Anthracene	U	0.20	1.0	0.20	0.20	0.077
206-44-0	Fluoranthene	U	0.20	1.0	0.20	0.20	0.10
129-00-0	Pyrene	U	0.20	1.0	0.20	0.20	0.086
56-55-3	Benzo(a)anthracene	U	0.20	1.0	0.20	0.20	0.12
218-01-9	Chrysene	U	0.20	1.0	0.20	0.20	0.067
205-99-2	Benzo(b)fluoranthene	U	0.20	1.0	0.20	0.20	0.086
207-08-9	Benzo(k)fluoranthene	U	0.20	1.0	0.20	0.20	0.077
50-32-8	Benzo(a)pyrene	U	0.20	1.0	0.20	0.20	0.086
193-39-5	Indeno(1,2,3-cd)pyrene	U	0.20	1.0	0.20	0.20	0.096
53-70-3	Dibenzo(a,h)anthracene	U	0.20	1.0	0.20	0.20	0.14
191-24-2	Benzo(g,h,i)perylene	U	0.20	1.0	0.20	0.20	0.077
90-12-0	1-Methylnaphthalene	U	0.20	1.0	0.20	0.20	0.077
7297-45-2	2-Methylnaphthalene-d10		55%				
81103-79-9	Fluorene-d10		60%				
1718-52-1	Pyrene-d10		116%				

KATAHDIN ANALYTICAL SERVICES
Report of Analytical Results

Client: Tetra Tech NUS, Inc
Project: CTO303 NAS MAYPORT
PO No:
Sample Date: 11/24/03
Received Date: 11/26/03
Extraction Date: 12/01/03
Analysis Date: 12/04/03
Report Date: 12/16/2003
Matrix: WATER
% Solids: NA

Lab ID: WT3025-5
Client ID: MPT-250-MW6D
SDG: WT3025
Extracted by: LS
Extraction Method: SW846 3510
Analyst: SAW
Analysis Method: SW846 M8100
Lab Prep Batch: WG4863
Units: ug/L

CAS#	Compound	Flags	Results	DF	PQL	Adj.PQL	Adj.MDL
	Petroleum Range Organics		560	1.0	500	500	270
	n-Triacontane-D62		88%				
	O-Terphenyl		* 72%				

APPENDIX L

FLUCL OUTPUT

FDEP UCL Calculator Version 0.97 — 12/28/04

Note: Bounding estimates are worst case 95% UCLs based on the Chebyshev (mean, std) method.

Summary Statistics for	
Number of Samples	39
Number of Censored Data	36
Minimum	0.635
Maximum	9.85
Mean	0.335205
Median	0.05
Standard Deviation	1.575484
Variance	
Coefficient of Variation	4.700058
Skewness	6.106768

95% UCL (Assuming Normal Data)	
Student's-t	NA

95% UCL (Adjusted for Skewness)	
Adjusted-CLT	NA
Modified-t	NA

95% Non-parametric UCL	
CLT	NA
Jackknife	NA
Standard Bootstrap	NA
Bootstrap-t	NA
Chebyshev (Mean, Std)	NA

95% Bounding Method UCL	
Bounding (Max)	1.434865
Bounding (1/2 DL)	1.418313

Summary Statistics for	
Minimum	NA
Maximum	NA
Mean	NA
Standard Deviation	NA
Variance	NA

Goodness-of-Fit Results	
Distribution Recommended	NA
Distribution Used	Neither

Estimates Assuming Lognormal Distribution	
MLE Mean	NA
MLE Standard Deviation	NA
MLE Median	NA
MLE Coefficient of Variation	NA
MVUE Estimate of Mean	NA
MVUE Estimate of Std. Dev.	NA
MVUE Estimate of SE	NA
MVUE Coefficient of Variation	NA

UCL Assuming Lognormal Distribution	
95% H-UCL	NA
95% Chebyshev (MVUE) UCL	NA
99% Chebyshev (MVUE) UCL	NA

FDEP Recommended UCL to Use:

1.434865

PROUCL NA

Note: These estimates are valid ONLY if samples are random and representative.

FDEP UCL Calculator Version 0.97 — 12/28/04

Note: Bounding estimates are worst case 95% UCLs based on the Chebyshev (mean, std) method.

Summary Statistics for	
Number of Samples	34
Number of Censored Data	31
Minimum	0.073
Maximum	9.85
Mean	0.347147
Median	0.05
Standard Deviation	1.68225
Variance	
Coefficient of Variation	4.845929
Skewness	5.79763

95% UCL (Assuming Normal Data)	
Student's-t	NA

95% UCL (Adjusted for Skewness)	
Adjusted-CLT	NA
Modified-t	NA

95% Non-parametric UCL	
CLT	NA
Jackknife	NA
Standard Bootstrap	NA
Bootstrap-t	NA
Chebyshev (Mean, Std)	NA

95% Bounding Method UCL	
Bounding (Max)	1.604705
Bounding (1/2 DL)	1.588325

Summary Statistics for	
Minimum	NA
Maximum	NA
Mean	NA
Standard Deviation	NA
Variance	NA

Goodness-of-Fit Results	
Distribution Recommended	NA
Distribution Used	Neither

Estimates Assuming Lognormal Distribution	
MLE Mean	NA
MLE Standard Deviation	NA
MLE Median	NA
MLE Coefficient of Variation	NA
MVUE Estimate of Mean	NA
MVUE Estimate of Std. Dev.	NA
MVUE Estimate of SE	NA
MVUE Coefficient of Variation	NA

UCL Assuming Lognormal Distribution	
95% H-UCL	NA
95% Chebyshev (MVUE) UCL	NA
99% Chebyshev (MVUE) UCL	NA

FDEP Recommended UCL to Use:

1.604705

PROUCL NA

Note: These estimates are valid ONLY if samples are random and representative.

FDEP UCL Calculator Version 0.97 **12/28/04**

Note: Bounding estimates are worst case 95% UCLs based on the Chebyshev (mean, std) method.

Summary Statistics for	
Number of Samples	39
Number of Censored Data	36
Minimum	1
Maximum	15
Mean	0.476795
Median	0.05
Standard Deviation	2.397437
Variance	
Coefficient of Variation	5.028235
Skewness	6.16109

95% UCL (Assuming Normal Data)	
Student's-t	NA

95% UCL (Adjusted for Skewness)	
Adjusted-CLT	NA
Modified-t	NA

95% Non-parametric UCL	
CLT	NA
Jackknife	NA
Standard Bootstrap	NA
Bootstrap-t	NA
Chebyshev (Mean, Std)	NA

95% Bounding Method UCL	
Bounding (Max)	2.150164
Bounding (1/2 DL)	2.133474

Summary Statistics for	
Minimum	NA
Maximum	NA
Mean	NA
Standard Deviation	NA
Variance	NA

Goodness-of-Fit Results	
Distribution Recommended	NA
Distribution Used	Neither

Estimates Assuming Lognormal Distribution	
MLE Mean	NA
MLE Standard Deviation	NA
MLE Median	NA
MLE Coefficient of Variation	NA
MVUE Estimate of Mean	NA
MVUE Estimate of Std. Dev.	NA
MVUE Estimate of SE	NA
MVUE Coefficient of Variation	NA

UCL Assuming Lognormal Distribution	
95% H-UCL	NA
95% Chebyshev (MVUE) UCL	NA
99% Chebyshev (MVUE) UCL	NA

FDEP Recommended UCL to Use:

2.150164

PROUCL NA

Note: These estimates are valid ONLY if samples are random and representative.

FDEP UCL Calculator Version 0.97 12/28/04

Note: Bounding estimates are worst case 95% UCLs based on the Chebyshev (mean, std) method.

Summary Statistics for	
Number of Samples	34
Number of Censored Data	31
Minimum	0.073
Maximum	15
Mean	0.509559
Median	0.05
Standard Deviation	2.565701
Variance	
Coefficient of Variation	5.035141
Skewness	5.794135

95% UCL (Assuming Normal Data)	
Student's-t	NA

95% UCL (Adjusted for Skewness)	
Adjusted-CLT	NA
Modified-t	NA

95% Non-parametric UCL	
CLT	NA
Jackknife	NA
Standard Bootstrap	NA
Bootstrap-t	NA
Chebyshev (Mean, Std)	NA

95% Bounding Method UCL	
Bounding (Max)	2.427536
Bounding (1/2 DL)	2.411085

Summary Statistics for	
Minimum	NA
Maximum	NA
Mean	NA
Standard Deviation	NA
Variance	NA

Goodness-of-Fit Results	
Distribution Recommended	NA
Distribution Used	Neither

Estimates Assuming Lognormal Distribution	
MLE Mean	NA
MLE Standard Deviation	NA
MLE Median	NA
MLE Coefficient of Variation	NA
MVUE Estimate of Mean	NA
MVUE Estimate of Std. Dev.	NA
MVUE Estimate of SE	NA
MVUE Coefficient of Variation	NA

UCL Assuming Lognormal Distribution	
95% H-UCL	NA
95% Chebyshev (MVUE) UCL	NA
99% Chebyshev (MVUE) UCL	NA

FDEP Recommended UCL to Use:

2.427536

PROUCL NA

Note: These estimates are valid ONLY if samples are random and representative.

FDEP UCL Calculator Version 0.97 **12/28/04**

Note: Bounding estimates are worst case 95% UCLs based on the Chebyshev (mean, std) method.

Summary Statistics for	
Number of Samples	39
Number of Censored Data	36
Minimum	2.2
Maximum	40.5
Mean	1.284308
Median	0.05
Standard Deviation	6.519323
Variance	
Coefficient of Variation	5.076138
Skewness	6.040125

95% UCL (Assuming Normal Data)	
Student's-t	NA

95% UCL (Adjusted for Skewness)	
Adjusted-CLT	NA
Modified-t	NA

95% Non-parametric UCL	
CLT	NA
Jackknife	NA
Standard Bootstrap	NA
Bootstrap-t	NA
Chebyshev (Mean, Std)	NA

95% Bounding Method UCL	
Bounding (Max)	5.834682
Bounding (1/2 DL)	5.78932

Summary Statistics for	
Minimum	NA
Maximum	NA
Mean	NA
Standard Deviation	NA
Variance	NA

Goodness-of-Fit Results	
Distribution Recommended	NA
Distribution Used	Neither

Estimates Assuming Lognormal Distribution	
MLE Mean	NA
MLE Standard Deviation	NA
MLE Median	NA
MLE Coefficient of Variation	NA
MVUE Estimate of Mean	NA
MVUE Estimate of Std. Dev.	NA
MVUE Estimate of SE	NA
MVUE Coefficient of Variation	NA

UCL Assuming Lognormal Distribution	
95% H-UCL	NA
95% Chebyshev (MVUE) UCL	NA
99% Chebyshev (MVUE) UCL	NA

FDEP Recommended UCL to Use:

5.834682

PROUCL NA

Note: These estimates are valid ONLY if samples are random and representative.

FDEP UCL Calculator Version 0.97 **12/28/04**

Note: Bounding estimates are worst case 95% UCLs based on the Chebyshev (mean, std) method.

Summary Statistics for	
Number of Samples	34
Number of Censored Data	31
Minimum	0.1
Maximum	40.5
Mean	1.404647
Median	0.05
Standard Deviation	6.979322
Variance	
Coefficient of Variation	4.968737
Skewness	5.659826

95% UCL (Assuming Normal Data)	
Student's-t	NA

95% UCL (Adjusted for Skewness)	
Adjusted-CLT	NA
Modified-t	NA

95% Non-parametric UCL	
CLT	NA
Jackknife	NA
Standard Bootstrap	NA
Bootstrap-t	NA
Chebyshev (Mean, Std)	NA

95% Bounding Method UCL	
Bounding (Max)	6.622005
Bounding (1/2 DL)	6.605656

Summary Statistics for	
Minimum	NA
Maximum	NA
Mean	NA
Standard Deviation	NA
Variance	NA

Goodness-of-Fit Results	
Distribution Recommended	NA
Distribution Used	Neither

Estimates Assuming Lognormal Distribution	
MLE Mean	NA
MLE Standard Deviation	NA
MLE Median	NA
MLE Coefficient of Variation	NA
MVUE Estimate of Mean	NA
MVUE Estimate of Std. Dev.	NA
MVUE Estimate of SE	NA
MVUE Coefficient of Variation	NA

UCL Assuming Lognormal Distribution	
95% H-UCL	NA
95% Chebyshev (MVUE) UCL	NA
99% Chebyshev (MVUE) UCL	NA

FDEP Recommended UCL to Use:

6.622005

PROUCL NA

Note: These estimates are valid ONLY if samples are random and representative.

FDEP UCL Calculator Version 0.97 **12/28/04**

Note: Bounding estimates are worst case 95% UCLs based on the Chebyshev (mean, std) method.

Summary Statistics for	
Number of Samples	39
Number of Censored Data	36
Minimum	2.2
Maximum	54
Mean	1.635256
Median	0.05
Standard Deviation	8.664251
Variance	
Coefficient of Variation	5.298405
Skewness	6.12091

95% UCL (Assuming Normal Data)	
Student's-t	NA

95% UCL (Adjusted for Skewness)	
Adjusted-CLT	NA
Modified-t	NA

95% Non-parametric UCL	
CLT	NA
Jackknife	NA
Standard Bootstrap	NA
Bootstrap-t	NA
Chebyshev (Mean, Std)	NA

95% Bounding Method UCL	
Bounding (Max)	7.682753
Bounding (1/2 DL)	7.638012

Summary Statistics for	
Minimum	NA
Maximum	NA
Mean	NA
Standard Deviation	NA
Variance	NA

Goodness-of-Fit Results	
Distribution Recommended	NA
Distribution Used	Neither

Estimates Assuming Lognormal Distribution	
MLE Mean	NA
MLE Standard Deviation	NA
MLE Median	NA
MLE Coefficient of Variation	NA
MVUE Estimate of Mean	NA
MVUE Estimate of Std. Dev.	NA
MVUE Estimate of SE	NA
MVUE Coefficient of Variation	NA

UCL Assuming Lognormal Distribution	
95% H-UCL	NA
95% Chebyshev (MVUE) UCL	NA
99% Chebyshev (MVUE) UCL	NA

FDEP Recommended UCL to Use:

7.682753

PROUCL NA

Note: These estimates are valid ONLY if samples are random and representative.

FDEP UCL Calculator Version 0.97 **12/28/04**

Note: Bounding estimates are worst case 95% UCLs based on the Chebyshev (mean, std) method.

Summary Statistics for	
Number of Samples	34
Number of Censored Data	31
Minimum	0.1
Maximum	54
Mean	1.806765
Median	0.05
Standard Deviation	9.278657
Variance	
Coefficient of Variation	5.135509
Skewness	5.726542

95% UCL (Assuming Normal Data)	
Student's-t	NA

95% UCL (Adjusted for Skewness)	
Adjusted-CLT	NA
Modified-t	NA

95% Non-parametric UCL	
CLT	NA
Jackknife	NA
Standard Bootstrap	NA
Bootstrap-t	NA
Chebyshev (Mean, Std)	NA

95% Bounding Method UCL	
Bounding (Max)	8.74298
Bounding (1/2 DL)	8.726279

Summary Statistics for	
Minimum	NA
Maximum	NA
Mean	NA
Standard Deviation	NA
Variance	NA

Goodness-of-Fit Results	
Distribution Recommended	NA
Distribution Used	Neither

Estimates Assuming Lognormal Distribution	
MLE Mean	NA
MLE Standard Deviation	NA
MLE Median	NA
MLE Coefficient of Variation	NA
MVUE Estimate of Mean	NA
MVUE Estimate of Std. Dev.	NA
MVUE Estimate of SE	NA
MVUE Coefficient of Variation	NA

UCL Assuming Lognormal Distribution	
95% H-UCL	NA
95% Chebyshev (MVUE) UCL	NA
99% Chebyshev (MVUE) UCL	NA

FDEP Recommended UCL to Use:

8.74298

PROUCL NA

Note: These estimates are valid ONLY if samples are random and representative.

FDEP UCL Calculator Version 0.97 — 12/28/04

Note: Bounding estimates are worst case 95% UCLs based on the Chebyshev (mean, std) method.

Summary Statistics for	
Number of Samples	39
Number of Censored Data	35
Minimum	0.13
Maximum	45.5
Mean	1.384205
Median	0.05
Standard Deviation	7.295527
Variance	
Coefficient of Variation	5.270554
Skewness	6.129711

95% UCL (Assuming Normal Data)	
Student's-t	NA

95% UCL (Adjusted for Skewness)	
Adjusted-CLT	NA
Modified-t	NA

95% Non-parametric UCL	
CLT	NA
Jackknife	NA
Standard Bootstrap	NA
Bootstrap-t	NA
Chebyshev (Mean, Std)	NA

95% Bounding Method UCL	
Bounding (Max)	6.476357
Bounding (1/2 DL)	6.431875

Summary Statistics for	
Minimum	NA
Maximum	NA
Mean	NA
Standard Deviation	NA
Variance	NA

Goodness-of-Fit Results	
Distribution Recommended	NA
Distribution Used	Neither

Estimates Assuming Lognormal Distribution	
MLE Mean	NA
MLE Standard Deviation	NA
MLE Median	NA
MLE Coefficient of Variation	NA
MVUE Estimate of Mean	NA
MVUE Estimate of Std. Dev.	NA
MVUE Estimate of SE	NA
MVUE Coefficient of Variation	NA

UCL Assuming Lognormal Distribution	
95% H-UCL	NA
95% Chebyshev (MVUE) UCL	NA
99% Chebyshev (MVUE) UCL	NA

FDEP Recommended UCL to Use:

6.476357

PROUCL NA

Note: These estimates are valid ONLY if samples are random and representative.

FDEP UCL Calculator Version 0.97 — 12/28/04

Note: Bounding estimates are worst case 95% UCLs based on the Chebyshev (mean, std) method.

Summary Statistics for	
Number of Samples	34
Number of Censored Data	31
Minimum	0.13
Maximum	45.5
Mean	1.518324
Median	0.05
Standard Deviation	7.81226
Variance	
Coefficient of Variation	5.14532
Skewness	5.740388

95% UCL (Assuming Normal Data)	
Student's-t	NA

95% UCL (Adjusted for Skewness)	
Adjusted-CLT	NA
Modified-t	NA

95% Non-parametric UCL	
CLT	NA
Jackknife	NA
Standard Bootstrap	NA
Bootstrap-t	NA
Chebyshev (Mean, Std)	NA

95% Bounding Method UCL	
Bounding (Max)	7.358341
Bounding (1/2 DL)	7.342089

Summary Statistics for	
Minimum	NA
Maximum	NA
Mean	NA
Standard Deviation	NA
Variance	NA

Goodness-of-Fit Results	
Distribution Recommended	NA
Distribution Used	Neither

Estimates Assuming Lognormal Distribution	
MLE Mean	NA
MLE Standard Deviation	NA
MLE Median	NA
MLE Coefficient of Variation	NA
MVUE Estimate of Mean	NA
MVUE Estimate of Std. Dev.	NA
MVUE Estimate of SE	NA
MVUE Coefficient of Variation	NA

UCL Assuming Lognormal Distribution	
95% H-UCL	NA
95% Chebyshev (MVUE) UCL	NA
99% Chebyshev (MVUE) UCL	NA

FDEP Recommended UCL to Use:

7.358341

PROUCL NA

Note: These estimates are valid ONLY if samples are random and representative.

FDEP UCL Calculator Version 0.97 **12/28/04**

Note: Bounding estimates are worst case 95% UCLs based on the Chebyshev (mean, std) method.

Summary Statistics for	
Number of Samples	39
Number of Censored Data	35
Minimum	0.13
Maximum	62
Mean	1.807462
Median	0.05
Standard Deviation	9.925519
Variance	
Coefficient of Variation	5.491414
Skewness	6.181624

95% UCL (Assuming Normal Data)	
Student's-t	NA

95% UCL (Adjusted for Skewness)	
Adjusted-CLT	NA
Modified-t	NA

95% Non-parametric UCL	
CLT	NA
Jackknife	NA
Standard Bootstrap	NA
Bootstrap-t	NA
Chebyshev (Mean, Std)	NA

95% Bounding Method UCL	
Bounding (Max)	8.735301
Bounding (1/2 DL)	8.691744

Summary Statistics for	
Minimum	NA
Maximum	NA
Mean	NA
Standard Deviation	NA
Variance	NA

Goodness-of-Fit Results	
Distribution Recommended	NA
Distribution Used	Neither

Estimates Assuming Lognormal Distribution	
MLE Mean	NA
MLE Standard Deviation	NA
MLE Median	NA
MLE Coefficient of Variation	NA
MVUE Estimate of Mean	NA
MVUE Estimate of Std. Dev.	NA
MVUE Estimate of SE	NA
MVUE Coefficient of Variation	NA

UCL Assuming Lognormal Distribution	
95% H-UCL	NA
95% Chebyshev (MVUE) UCL	NA
99% Chebyshev (MVUE) UCL	NA

FDEP Recommended UCL to Use:

8.735301

PROUCL NA

Note: These estimates are valid ONLY if samples are random and representative.

FDEP UCL Calculator Version 0.97 12/28/04

Note: Bounding estimates are worst case 95% UCLs based on the Chebyshev (mean, std) method.

Summary Statistics for	
Number of Samples	34
Number of Censored Data	31
Minimum	0.13
Maximum	62
Mean	2.003824
Median	0.05
Standard Deviation	10.63107
Variance	
Coefficient of Variation	5.305391
Skewness	5.781096

95% UCL (Assuming Normal Data)	
Student's-t	NA

95% UCL (Adjusted for Skewness)	
Adjusted-CLT	NA
Modified-t	NA

95% Non-parametric UCL	
CLT	NA
Jackknife	NA
Standard Bootstrap	NA
Bootstrap-t	NA
Chebyshev (Mean, Std)	NA

95% Bounding Method UCL	
Bounding (Max)	9.951027
Bounding (1/2 DL)	9.934623

Summary Statistics for	
Minimum	NA
Maximum	NA
Mean	NA
Standard Deviation	NA
Variance	NA

Goodness-of-Fit Results	
Distribution Recommended	NA
Distribution Used	Neither

Estimates Assuming Lognormal Distribution	
MLE Mean	NA
MLE Standard Deviation	NA
MLE Median	NA
MLE Coefficient of Variation	NA
MVUE Estimate of Mean	NA
MVUE Estimate of Std. Dev.	NA
MVUE Estimate of SE	NA
MVUE Coefficient of Variation	NA

UCL Assuming Lognormal Distribution	
95% H-UCL	NA
95% Chebyshev (MVUE) UCL	NA
99% Chebyshev (MVUE) UCL	NA

FDEP Recommended UCL to Use:

9.951027

PROUCL NA

Note: These estimates are valid ONLY if samples are random and representative.

FDEP UCL Calculator Version 0.97 — 12/28/04

Note: Results reflect censored parameter estimations based on distributional assumptions.

Censor Estimated Statistics for		
Number of Samples		39
Number of Censored Data		16
Minimum Non-censored		5.3
Maximum		12000
Mean	NA	
Median	NA	
Standard Deviation	NA	
Variance	NA	
Coefficient of Variation	NA	
Skewness	NA	

95% UCL (Assuming Normal Data)	
Student's-t	NA

95% UCL (Adjusted for Skewness)	
Adjusted-CLT	NA
Modified-t	NA

95% Non-parametric UCL	
CLT	NA
Jackknife	NA
Standard Bootstrap	NA
Bootstrap-t	NA
Chebyshev (Mean, Std)	2336.868

Censor Estimated Statistics for ln()	
Minimum	0.74193728
Maximum	9.392662048
Mean	2.612526037
Standard Deviation	3.193531433
Variance	10.19864302
Fit	0.985775292

Goodness-of-Fit Results	
Distribution Recommended	Lognormal
Distribution Used	Lognormal

Estimates Assuming Lognormal Distribution	
MLE Mean	2234.667095
MLE Standard Deviation	366278.9358
MLE Median	13.63344599
MLE Coefficient of Variation	163.907607
MVUE Estimate of Mean	901.8366699
MVUE Estimate of Std. Dev.	10196.82107
MVUE Estimate of SE	733.0115961
MVUE Coefficient of Variation	11.30672705

UCL Assuming Lognormal Distribution	
95% H-UCL	39240.21484
95% Chebyshev (MVUE) UCL	4096.960938
99% Chebyshev (MVUE) UCL	8195.228516

FDEP Recommended UCL to Use:

2336.868

PROUCL NA

Note: These estimates are valid ONLY if samples are random and representative.

FDEP UCL Calculator Version 0.97 — 12/28/04

Note: Results reflect censored parameter estimations based on distributional assumptions.

Censor Estimated Statistics for		
Number of Samples		34
Number of Censored Data		16
Minimum Non-censored		5.3
Maximum		4120
Mean	NA	
Median	NA	
Standard Deviation	NA	
Variance	NA	
Coefficient of Variation	NA	
Skewness	NA	

95% UCL (Assuming Normal Data)	
Student's-t	NA

95% UCL (Adjusted for Skewness)	
Adjusted-CLT	NA
Modified-t	NA

95% Non-parametric UCL	
CLT	NA
Jackknife	NA
Standard Bootstrap	NA
Bootstrap-t	NA
Chebyshev (Mean, Std)	886.7789

Censor Estimated Statistics for ln()	
Minimum	0.74193728
Maximum	8.323608398
Mean	2.291544981
Standard Deviation	2.799820608
Variance	7.838995435
Fit	0.986003757

Goodness-of-Fit Results	
Distribution Recommended	Lognormal
Distribution Used	Lognormal

Estimates Assuming Lognormal Distribution	
MLE Mean	498.2204743
MLE Standard Deviation	25092.9785
MLE Median	9.890206064
MLE Coefficient of Variation	50.36520937
MVUE Estimate of Mean	241.3868713
MVUE Estimate of Std. Dev.	1547.937741
MVUE Estimate of SE	184.7459933
MVUE Coefficient of Variation	6.412684055

UCL Assuming Lognormal Distribution	
95% H-UCL	5845.79541
95% Chebyshev (MVUE) UCL	1046.676147
99% Chebyshev (MVUE) UCL	2079.591064

FDEP Recommended UCL to Use:

886.7789

PROUCL NA

Note: These estimates are valid ONLY if samples are random and representative.

FDEP UCL Calculator Version 0.97 — 12/28/04

Note: Results reflect censored parameter estimations based on distributional assumptions.

Censor Estimated Statistics for

Number of Samples		39
Number of Censored Data		16
Minimum Non-censored		5.3
Maximum		12000
Mean	NA	
Median	NA	
Standard Deviation	NA	
Variance	NA	
Coefficient of Variation	NA	
Skewness	NA	

95% UCL (Assuming Normal Data)

Student's-t	NA

95% UCL (Adjusted for Skewness)

Adjusted-CLT	NA
Modified-t	NA

95% Non-parametric UCL

CLT	NA
Jackknife	NA
Standard Bootstrap	NA
Bootstrap-t	NA
Chebyshev (Mean, Std)	2659.185

Censor Estimated Statistics for ln()

Minimum	0.74193728
Maximum	9.392662048
Mean	2.63698119
Standard Deviation	3.271188235
Variance	10.70067247
Fit	0.981709957

Goodness-of-Fit Results

Distribution Recommended	Lognormal
Distribution Used	Lognormal

Estimates Assuming Lognormal Distribution

MLE Mean	2943.390493
MLE Standard Deviation	620103.9441
MLE Median	13.97096419
MLE Coefficient of Variation	210.6767504
MVUE Estimate of Mean	1107.801758
MVUE Estimate of Std. Dev.	13425.79785
MVUE Estimate of SE	914.7999781
MVUE Coefficient of Variation	12.11931445

UCL Assuming Lognormal Distribution

95% H-UCL	59108.88672
95% Chebyshev (MVUE) UCL	5095.323242
99% Chebyshev (MVUE) UCL	10209.96973

FDEP Recommended UCL to Use:

2659.185

PROUCL NA

Note: These estimates are valid ONLY if samples are random and representative.

FDEP UCL Calculator Version 0.97 — 12/28/04

Note: Results reflect censored parameter estimations based on distributional assumptions.

Censor Estimated Statistics for		
Number of Samples		34
Number of Censored Data		16
Minimum Non-censored		5.3
Maximum		8100
Mean	NA	
Median	NA	
Standard Deviation	NA	
Variance	NA	
Coefficient of Variation	NA	
Skewness	NA	

95% UCL (Assuming Normal Data)	
Student's-t	NA

95% UCL (Adjusted for Skewness)	
Adjusted-CLT	NA
Modified-t	NA

95% Non-parametric UCL	
CLT	NA
Jackknife	NA
Standard Bootstrap	NA
Bootstrap-t	NA
Chebyshev (Mean, Std)	1561.817

Censor Estimated Statistics for ln()	
Minimum	0.74193728
Maximum	8.999619484
Mean	2.293912389
Standard Deviation	2.93922922
Variance	8.639068406
Fit	0.984667718

Goodness-of-Fit Results	
Distribution Recommended	Lognormal
Distribution Used	Lognormal

Estimates Assuming Lognormal Distribution	
MLE Mean	745.04647
MLE Standard Deviation	55987.97763
MLE Median	9.913647957
MLE Coefficient of Variation	75.14696048
MVUE Estimate of Mean	321.9699402
MVUE Estimate of Std. Dev.	2304.819516
MVUE Estimate of SE	255.10854
MVUE Coefficient of Variation	7.158492853

UCL Assuming Lognormal Distribution	
95% H-UCL	11074.58691
95% Chebyshev (MVUE) UCL	1433.962524
99% Chebyshev (MVUE) UCL	2860.274414

FDEP Recommended UCL to Use:

1433.963

PROUCL NA

Note: These estimates are valid ONLY if samples are random and representative.